

MARCH 1999

This Old House

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MAKEOVER OF A RUN-DOWN VICTORIAN

A GLORIOUS RENOVATION

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KITCHEN OF THE FUTURE:

Design breakthroughs to use today

BEFORE & AFTER:

How to transform a ranch-style house

NEW: OUTTAKES

Behind the scenes with Norm, Steve and the guys

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Sometimes you forget

Sometimes you forget the bread.
the store altogether.



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C O N T E N T S

MARCH 1999



Watertown Finale, p. 75

As Norm Abram, Tom Silva, Richard Trevelyan and their crew apply the finishing touches to a stunning Queen Anne, the renovation may go down as the coldest in This Old House history—and also one of the most spectacular.
By BRAD LUTLEY

features

A New Old House

A family of five builds a house that possesses quality workmanship, modern convenience and—thanks to lovely architectural details salvaged from period structures—plenty of historic charm. By EICHEN CORNWELL

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An American Craftsman

Two former job ladies build steepback houses using carved timbers broken in circles. By BRAD LUTLEY

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Dream House: Stone-Faced

At This Old House magazine's project in Wilton, Connecticut, digging a concrete foundation with a fold-down mirror gives the illusion of a solid stone pedestal supporting the rambling Single Style house. By JACI MCCLINTOCK

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Classical Grandeur

Belmont, a gracious Greek Revival in Natchez, Mississippi, embodies an appealing combination of elegance and hospitality. And with its cross-hatched design, the mansion was under production. By JACI MCCLINTOCK

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Poster: Bolts and Nuts

Check out these fancy threads as we go nuts for bolts. By PETER JENSEN

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PLANTER'S PALACE, P. 117



BACK 45, P. 102



ON WITH THE JOB, P. 94

COVER

A striking view off the kitchen in the Watertown project. Project: A restored Queen Anne in old New England. Photographs by Frances Johnson. See story p. 75



COVER: JACI MCCLINTOCK



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colors, woods and textures create a choice of three coordinated interior designs we call Atmospheres™. Advance with its natural tones. Ambiance with its Mediterranean spirit. Anthem with its classic simplicity. Every stroke and pattern carefully crafted to reflect your personal style. Call it a testament to your good taste. Call it a driver's right to choose. Call it the perfect interior.





ILLUSTRATION BY J. B. J.

"An eave is to a house what an eyebrow is to a face."

—Robert A.M. Stern

up front

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THE BEST HOME, EVER

outtakes

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Noreen's Key West Couch
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Tom's Problem Workshop
Calendar



THE BEST HOME, EVER

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FOR INFORMATION ON ADVERTISEMENTS, SUBSCRIPTIONS, PROJECTS AND SERVICES, SEE BACKMATTER, P. 143



Susan Miller
General Contractor

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Radiant Heatwaves

I have a radiant floor heating system and enjoy it ("Take a Walk on the Warm Side," November 1999, B-4). I feel you've short-changed the advantages of such systems. You mentioned it is hot water (underground and forced hot air) heating. There are both convection heating systems: The former heats water that then heats the air in work rooms, and the latter heats air directly. No mention was made of why it is called radiant hot-water floor heating. Most of the heat transfer can be compared to the way the sun heats us: we radiate heat directly from our body to another. Radiant floor heating systems heat people (and solid objects like chairs and beds—another advantage). But the bulk of radiant floor heat is the radiant effect. We like having a woodstove in every room. Loads on a rock in the sun never melt if no good. And just think of our canine friends lounging about on their backs too.

Colin McKinnon, Denver, Maine

I prefer energy efficiency programs for a utility company and provide radiant floor heating in my customers as both an energy efficiency measure and as the highest quality form of heat for their home or business. I am very happy to see "Take a Walk on the Warm Side." It was an excellent article that covered most of the important features of radiant in-floor heating. There is, however, a way to avoid the condensation problems experienced with gas- or oil-fired boilers. Many of my customers use two different forms of electric heating systems to heat and not floor electric boilers and problem heating. They're cheaper to operate than gas- or oil-fired boilers and do not cause condensation problems.

Tom Dorman, Newburg, Maine

The article "Take a Walk on the Warm Side" discusses the advantages of radiant heat energy efficiency associated with radiant floor heat but fails to mention some of the significant benefits related to this system. When the floor itself becomes the "radiator," the several devices distributing the heat in most conventional systems is eliminated. No ductwork installation, no cost over radiators and a grille or air diffusers are required to distribute the heat. The bringing, taking and pushing of hot water or steam—often through metal piping—are also eliminated. More visible floor space becomes available and it is a natural bump in front of windows relative to the furniture layout. In smaller homes, these space savings can have considerable functional and aesthetic impact.

Donna Harman, Westport, Conn.

I just finished reading your article about the benefits of in-floor radiant heating. I have lived with it and am in the position to know that you are wrong in as the worst form of heating ever invented. The floor is hot, and the room is cold. Air circulation is absent. For those of us in the "Sun Belt of California," the system doesn't provide the quick heat we need in the morning and the cool-off we need in the hot part of the day. I lived with radiant floor heating in Marin County for eight years. I was never warm when it was cold. You cannot have rugs because they block the heat flow. Wall to wall is a no-no for us. The system needs bleeding regularly. The water becomes hard and smells when you do the bleeding. Shabbies will shut off entire sections of the system for no good reason. As the system ages, galvanic corrosion steps in to dole out each day an extra dime. Good old hot water or cast-iron-pipe-connected radiators, with space forced on to dole things around, are much better options for the high cost-of-living areas at least in the United States. My wife and I had a laugh about the "warmers" of your various installations.

Thomas M. Burrows, E. San Jose, Calif.

Bendy Trap

The article on radiating mice ("When There's a Mouse in the House," November

1999) was very informative. However, two of the soundings pictured, the Log Roll and the Dandy Gangster, could be directly more than just mice. Both use a container or entrance into which the mice are dropped to drown. It would be better out their entrance in a dandy palatoo. Household or neighborhood pests and children could easily ingest the entrance from either of its two traps and suffer fatal results. Please alert your readers to this hazard.

Rita Morosini, Phoenix

kudos

A few years back, we commended paper Woodworker for its cheerful and timely customer service. Since then, we've heard all sorts of anecdotes from The Old Bluebirds who've had similarly positive experiences with other manufacturers. Here's one of our favorites.

Delta Delights

I purchased a Delta Unisaw last year from a mail order company in North Dakota. Just a week after I had placed my order, massive floods hit that state. I expected the machine upon delivery and found that it was in good condition—except that various parts had a case of rust on them.

The mail-order company was surprisingly not at all business because of the flood, so I called Delta directly. They were wonderful. They sent me the parts immediately, free of charge. A year later, the saw runs great, and I have never purchased a 34-inch Delta band saw.

RICHARD KATZ, Felling, N.Y.

punch list

Correction: A list of Home Depot's stores on its website lists its location in a manufacturing plant, not a retail store. (Editor's note: 1/14)

• In the United States, for the "Work 24" the name of the company was spelled as a Home Depot. The name of the company was spelled as a Home Depot. The name of the company was spelled as a Home Depot. The name of the company was spelled as a Home Depot.

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Eleven new reasons to park your car in the driveway.



NEW RIDGID BENCH TOP AND STATIONARY TOOLS. YOU'LL FIND THEM ALL AT THE HOME DEPOT.

Your garage is about to get a lot smaller. Thanks to the new line of woodworking tools from Ridgid, a name professionals have trusted since 1933. Built to last, each tool has been engineered for the serious woodworker and is backed by a lifetime warranty. And, of course, at The Home Depot, you'll always find it here at the guaranteed low price. Every day. So you can afford to build almost anything you want. Including, perhaps, a new place to park the family car.





There's a lot of track. The 793 loaded Steve Thomas and Kenworth's Bob Cooper from a superstore's first John Deere season 15 for his.

KEEP ON TRUCKIN'

IF YOU'VE EVER PLAYED WITH Tonka trucks, you're going to wish you'd spent the day with T.O.M. host STEVE THOMAS when he went to the BINGHAM CANYON COPPER MINE to check out the source of the material used to roof THREE PORCHES AT THE WATERTOWN PROJECT. (SEE "BRILLIANT" PAGE 60.) BINGHAM CANYON, HALF AN HOUR OUTSIDE SALT LAKE CITY, IS THE LARGEST OPEN PIT IN THE NORTHERN HEMISPHERE, SO THE TRUCKS THAT TRANSPORT THE ORE TO THE INITIAL CRUSHER HAVE TO BE HUGE. THEY'RE TOO BIG AND HEAVY, IN FACT, TO DRIVE ON A PAVED ROAD. THE PARTS—including the 2,300-HORSEPOWER DIESEL ENGINE—GET SHIPPED

IN AND ASSEMBLED ON-SITE. AND IT TAKES A FIRE HOSE TO WASH OFF ALL THE MUD AND DIRT THEY PICK UP ON THE JOB. AFTER JUST A DAY AT THE MINE, THOUGH, STEVE GOT PRETTY USED TO THEIR GARGANTUAN SIZE. WHEN HE GOT HOME, HIS OWN FORD RANGER SUDDENLY LOOKED, WELL, TONKA-SIZED.



AW, SHUCKS

Was that Norm blushing behind his beard recently? Perhaps he'd taken a glander at a *Manville* magazine article in which writer Gern Henley confirms she's long favored a flame for the "TV look" as our favorite master carpenter here at *The Old House*. After all, she says, "Who can miss a solid, place-telling Yankee who knows the business end of a nail finisher, who can show a dove level, who can even build a working railway desk?" What's more, she says, "Norm does talk dirty. Dry rat. Middle. Lead based paint." Ooh boy.



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A STORM OF NORMS

"HI GUYS, I'M NORM," "NO, I'M NORM,"
"HEY, I'M NORM. NICE TO MEET YA!" SO
WENT THE CONVERSATION RECENTLY AT

A CHICAGO RESTAURANT, WHERE A SEA OF FLAID-CLAD, BEARDED AND
RESPECTABLE MEN VIED FOR AN INVITATION TO THE FIRST-EVER "NORM
LOOK-ALIKE" CONTEST, WHERE THE FIRST PRIZE IS \$10,000 IN PORTER
CABLE TOOLS. THE WOULD-BE CLONES, ALL FROM ILLINOIS, TRIED TO ONE-
UP EACH OTHER IN THEIR NORRINESS. "IT'S MY SMILE—IT'S JUST LIKE
NORM'S," SAID DAN PETERSON. "HE ALWAYS SEEMS HAPPY, AND I'M THE
SAME WAY. MY MOTTO IS: WHAT'S TO BE UPSET ABOUT?" BRAD DYLNHOFF,
A CARPENTER, GOES BY "NORM" AT WORK. HE ARRIVED ONE DAY TO FIND
THE NAME EMBROIDERED ON HIS HARD HAT AND HAS ANSWERED TO IT EVER
SINCE. "PEOPLE ARE ALWAYS COMING UP TO ME, ASKING FOR ADVICE
AND AUTOGRAPHS," DYLNHOFF SAID. "SOMETIMES I TELL THEM I'M NOT
NORM, AND THEY DON'T BELIEVE ME." BUT IN THE END, IT WAS STEVE RZY-
BOWICE WHO TOOK THE FIRST ROUND. HE MET NORM SIX YEARS AGO AT
A HARDWARE SHOW AND HAS SINCE PERFECTED THE LOOK. "MY MOTHER-
IN-LAW CALLS EVERY WEEK AND SAYS, 'I SAW YOU ON TV AGAIN,'" RZY-
BOWICE SAID. "DO YOU THINK NORM NEEDS A STUNT DOUBLE?" LOOK FOR
THE WINNER IN THE APRIL ISSUE
OF THIS OLD MOUSE MAGAZINE.

1. *Brad Dylnhoff, 43, a carpenter from Villa Park. "I wanted to know whether I'd like to be a piece of meat-to be exploited for my looks."*

2. *Dan Peterson, 35, a book-binding apprentice from LaGrange Park. "My brother and I dressed up as Norm and Steve and toured for Halloween."*

3. *Jeffrey Scott Steve Dylnhoff, 35, a short metal-welder from Mahanoy Park. "I wanted for the \$10,000 in tools and grand prize. With that, I could finally have a workshop like Norm's."*

4. *Craig Roberts, 43, a carpenter from McHenry. "I was sent going on for a couple of head tools, and the guys in the hardware store dragged me over to the Norm contest and made me over at the pump."*

5. *Mike Frank, 31, a post office and printer carpenter from Rock Falls. "Between the beard and the name, Norm and I could pass for twins."*

PAST PROJECT UPDATE: SALEM

This Old House's editors may remember the struggle Deborah and Kevin Gurnee endured to get a variegated apricot for their Salem, Massachusetts, Federal house in 1999. The town's historical commission never did give them the OK, so the Gurnees went the way and spent for another apartment nearby. In 2000, the town's historical commission (which was mostly opposed to the commission, replacing the member who opposed the strongest opposition to her decision) but the Gurnees are living well enough alone. "Now that we have a family room, I couldn't possibly give it up for a driveway," Deborah says. "I guess it all worked out in the end."



PHOTO BY JEFFREY SCOTT STEVE DYLNHOFF

The day we found a monster in our mailroom

This happened in Tokyo.

A Japanese mother returned a kid's parka to us. And somebody in Shipping discovered a toy in the pocket—a goofy, 4-inch monster.

Well, figuring some little kid would miss it, he sent it back.

The next thing you know, we received a postcard from a very grateful mother.

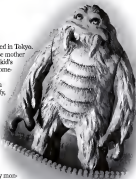
Seems that goofy monster was her kid's favorite toy.

Mind you, we get cards and letters all the time at Lands' End®—thanking us for the little unexpected things we do.

A lady in Germany wrote that she ordered a necktie for her son—who usually doesn't wear ties—asking us to send him instructions on how to tie it.

Instead, one of our people tied one to show him how. And sent it in a gift box, for extra measure.

And then, there's the English chap who sent back one of our Original Attaches—well worn—



asking us to repair a broken zipper.

We sent him a brand new Attache.

He wrote back that not only was he delighted by the replacement—he even likes the new color better.

Wherever Lands' End customers are, we try to do right by them, just as we do here at home.

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FISHY TALES



EVER SINCE THE *THIS OLD HOUSE* PROJECT ON NANTUCKET, STEVE HAS PROVIDED A REALITY CHECK ON NORM'S SELF-PROFESSED FISHING PROWESS. SO WHILE TOURING KEY WEST—WHERE THE *FISH* WINTER PROJECT IS UNDER WAY AND WHERE THIS MARLIN WAS HANGING AT THE TOWN PIER—STEVE

TOLD NORM THAT IF HE CLAIMED HE CAUGHT THE TROPHY HIMSELF, HE'D HAVE TO EAT IT FOR OWNER. BETTER BRING A RECIPROCATING SAW—THE FISH IS FIBERGLASS.



In Key West, where real estate is cheap, house owner and architect Michael Miller plans to convert one side of the back veranda, left, and turn it into a state-of-the-art kitchen. The front porch of his couch (upper) house, right, will remain intact, although the patio area may wind up in another location.



If you're not looking for a safe, no wonder, says the Tennessee Whiskey shop at 110

THIS OLD SAFE didn't fall on Jack Daniel, but it may as well have.

One morning in 1905, the safe wouldn't cooperate with its owner (he thought he knew the combination well). Mr. Jack lost his temper and kicked it hard enough to break his big toe. Infection took a lot of people in those days, and a few years later, it took Jack Newton Daniel. Faithful to his ways, we've never altered the whiskey that bears his name. No, we'll admit, ever found reason to mess with that old safe.

SMOOTH SIPPIN'
TENNESSEE WHISKEY

Your friends at Jack Daniel's remind you to drink responsibly.

Tennessee Whiskey • 40-43% alc/vol (80-83 proof) • Distilled and Bottled by
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CALENDAR

MARCH

1

Key West project enters final—final phone—



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Made-to-Buy kitchen goes in at Key West house

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Steve attends Granddaddy Hardware How-To Day in Pleasanton, Calif., and Tom Ahn New Jersey Home Remodeling & Remodeling Show

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ASK NORM

"Insulating a ceiling with fiberglass or cellulose will do little to block out noises overhead. Polycynens, an expanding foam, is a more effective sound barrier."

WIDE-PLANK FLOORBOARDS

I have a 17th-Century Colonial house in the middle of cranberry country, and I need to do some repairs to the joists. What's the best way to remove the old wide-plank floorboards so I can resaw them later? What tool can I use that will pull out the nails, with the least amount of damage?

—T. SCOTT SMITH, Grosse Pointe, Mass.

A basement, either a wall set or a punch and some pry bars are what you need for this fancy work. To get the first board up, just drive the nails all the way through. That will give you access to the ends of other boards, where you can pry up gently and carefully, let by let. Prying from the ends is harder work than prying along the sides, but you're less likely to split the boards. Be prepared for some breaking, though. I can't think of a single such job where we haven't damaged at least a few planks. Inevitably, we run out of not only luck but also patience as fewer and fewer joists begin to set us. Sometimes damaged boards can be glued or saved by trimming off broken edges. Still, if you can pry up floors in four rooms, you'll be lucky to have enough usable boards for three. If the job involves just one room, you'll undoubtedly come up short. You might take some boards from closets. Or you can try staining new or salvaged wood, but you'll never get a perfect match. The trick is to put the replacement boards in spots where they can be hidden by furniture and go unnoticed.

MISMATCHED COUNTERTOP

I want to build an oak and granite-like countertop with oak seams of the material by a inch oak strips and not cement board as a base. Any suggestions?

—WALTER M. LARIMER, Washington, Pa.

Such a countertop would be nothing but trouble. It's one thing to put an oak edge on a countertop but something else to use dimensional materials on the same work surface. The wood could expand enough to pop the granite—or even the tiles—and disaster would be trapped in the seams.



ROTTERSONE NOISES

The situation we want to talk about is noise. Our house is just three years old but, when we're in the basement, we can hear every little sound made upstairs. There is no insulation between the joists, and the basement ceiling is finished with drywall. Would insulation help?

—NANCY AND GARY COOPER, Washington, D.C.

We're doing a major rehab on a turn-of-the-century house whose previous owner told us there were old pine floors beneath his carpet and insulation. We'd like to restore those floors but are concerned about noise. Do sound-absorbing cork or glass wool help? If so, could we cover them with drywall without sacrificing their sound absorption?

—LEIGH GARDNER, Bethesda

Trying to contain or muffle noise is never easy. Insulating a ceiling with fiberglass or cellulose will do little to block out footsteps or other noises overhead. Polycynens, an expanding foam, is a much more effective sound barrier but is expensive and has to be installed by experienced workers. Acoustic tiles will cut down on noises within a room. But they won't go up in the basement, which is why you want to cover them up. The sticking point is that a layer of drywall will render the tiles useless, and the tiles will be loud. You can reduce the noise level somewhat by putting down lots of water rugs. Then again, you may discover that the cup up top of footsteps on an old pine floor is not so bad after all. The sounds of life are part of the charm of a house. It's miserable and, in any case, undesirable to create an atmosphere of terrible silence.

PLUG HOLES

Blowmastic insulation left holes in our aluminum siding. The plastic plugs the contractor provided are ineffective, and we'd like to do away with them when we paint the house. What do you suggest?

—KIMBER J. FOWLER, Fergusville, Ohio

I'm sorry to say I have no answer for you. We'll make you feel any



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HOUSE CALLS WITH STEVE

Building better kitchens and baths



Steve Thomas would estimate it costed the work valued at the Rhode Island School of Design's "seasonal kitchen." It's a place where he would be sure the delicious food is on the counter, not in the oven, as the island.

My interest in cooking came from my mother as a young. As the oldest of six kids, I learned at an early age to find for myself in the kitchen. My first significant culinary experience was a stupendous Thanksgiving sandwich utilizing all the food groups. I was 10 years old, home alone, and the astounding helplessness taught me about the compatibility of various ingredients. In later years, I learned to do the cooking—John Child, Mirroff Hinton, James Beard—and in the course of the world.

BY STEVE THOMAS

Cooking pleases me, but so does cooking the food of my labor. Maybe that's why the way the space functions interests me more than the way it looks. So, when the Rhode Island School of Design invited me to Providence to test drive a role-playing "seasonal kitchen," I couldn't top it.

For my first dish, I chose one of my family's favorites, fish soup. Although simple, a creative combination of a mass because of all the prep during the fish, making stock,



On a professional kitchen at RISD? The Old House has been Thomas. He'll visit a master's house in every town to help work on a renovation plan. Visit to House Calls With Steve, The Old House magazine, 1111 Avenue of the Americas, 17th Floor, New York, NY 10036.

PHOTOGRAPHS BY CHARLES FREEMAN

chopping, and roasting 24 eggs down and finally making a point to give and pass on point that pulled all the other things together. The only dish was that the kitchen was a prototype, a mock-up built to illustrate design concepts created after five years of research by RISD interior architect Jon Langmuir and a team of architects, appliance and materials manufacturers, industrial designers and students. As a prototype, the kitchen had no room for error or fancy design ideas, so we tried a Providence chef and another Nancy Kerr to do much of the actual cooking on portable burners set up at a side table.

Langmuir gave me step-by-step instructions on using the new design as we did the preparation. The first thing I did was to put away the contents of my shopping bags, and I noticed right off the lack of massive crowded appliances—no more kitchen, the refrigerator, stove and dishwasher. Instead, two custom-sized refrigerators flanking a "back counter" were intended to hold sink, drain, sink, and to us, with shelves and hooks above the top and bottom goods below. The above-counter area was intended to be built-in storage for cake pans, cookie sheets and cookie books occupied a dedicated baking area.

Once we'd loaded the shelves, Langmuir pointed me and the fish toward the back of the counter, a 4-by-9 foot island comprising sink, work surface, cutting board, cooking, pasta cooking, storage and three small pop-up dishwashers. The pop-ups, of course, were much up. What did work, though, was a feature I think is the most important innovation of the project, a monumental height adjustment that raised or lowered the whole island. I discovered an inside story that the 36-inch standard countertop height is too low for me, 34 is perfect. It's not hard to envision prior cabinets such as one behind the driver's seat of a car. From your horizon, and the counter rises or lowers to your preferred dimension. A sturdy rolling cart, which provided extra counter space, had a crank to raise and lower the top. All the counters were solid surface, polished smooth, with a lip running the edge to conceal spills and with no sharp angles to collect grime. This edge treatment makes everything a breeze to sweep up afterwards.

As I went through the motions of cleaning the fish and chopping the vegetables and onions, I did find the work space limited. But Langmuir pointed out that one of the kitchen's design concepts was to eliminate wasted space and motion. Thus the counter (continued on page 31)

HOUSE CALLS WITH STEVE



While project final, Jon Langmuir drew based for creation in the above-counter area, three components from the rolling cart to show position and how for the dishwasher. If it makes a sense, he can move it right into the line that opens. However, on one side of the cart, the cart also has a knowledge to accommodate a cook sitting on a chair. Steve would stand in on the cooking on the adjustable surface—which has a range of 28 to 48 inches in height to 30. Standard counter is 36 inches high, designed with a 3-foot 6-inch counter to stand.

Me more involved with the design of the kitchen of the island. A modular refrigerator compartment keeps Steve's food and vegetables in the "counter" area between the two and eye level, reducing the amount of standing and reaching that cooking usually entails (according to a RISD study, preparing meals in a small island involves about 400 steps in a conventional kitchen, whereas basic designs haven't changed much in the past half century.) Most of RISD's innovations aren't yet produced commercially, but modular refrigerators and freestones are already.



Why are these folks smiling? Because filling large pots and pans with water just got a whole lot easier thanks to the work island's four-eye spray system. Each nozzle comes with buttons for hot and cold water, so Steve doesn't have to maneuver that awkwardly shaped under a faucet. Also, the spray pot from which to cook. Langmuir's intention is to design a cool head and from here the water. If he were working up a creek instead of soup, he would be even need a pot. The island also comes with one-on-one power outlets.

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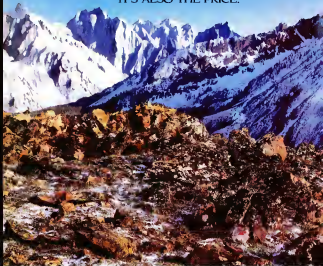
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HOUSE CALLS WITH STEVE

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(continued from page 34) and work were unnecessarily narrow and easily reached without stooping or by movement in a wheelchair. The dishwashers were arranged to be swift, efficient and quiet, located for more or less continuous use, in place of a sink up sink. As the baroque de cuisine got dirty, they go right into a dishwasher. With three dishwashers, one can be running while the others wait to be filled. The more I tinkered with this scrap, the more I liked it.

The island was loaded with ideas. There were pull-out seats right over the cooking or standing point, sealed touch-button panels to operate dishwashers, an infrared sensor to activate the work's washing pots and touch buttons on the sprayer to turn it on and off and adjust the fan pressure. While the sides of touch buttons for the plumbing valves are made of K&B (Jeep's Simple, Stupid), the project as a whole is meant to stimulate our imagination and challenge our preconceived notions of "kitchen."

Does the mode-up have any bearing on a kitchen I'd build or renovate now? You bet. I'd measure my own work island to accommodate people of different heights. While this would take

some engineering, it could be done with off the shelf parts from any industrial catalog. I'd also avoid any extremely high or low cabinets, reserving space for a walk-in pantry to store canned and dry goods, serving platters, labors involved and that optional motor I never I'd use but never do. Finally, I'd decentralize the appliances. Refrigerators similar to the popular "discontinued" ones (open-top chest and freezer drawers and cabinet units that can be placed throughout the kitchen) are already sold right off the showroom floor. See, for example, built-in, stainless steel, deep freezers, milk and creamers for bread and plants are commercially available, in an—of course—workings and even. And I'd take a close look at the drawer dishwashers now being imported from New Zealand.

The prototype I envisioned, formally called the Rhode Island School of Design Universal Kitchen Project, is an display at the Smithsonian Cooper-Hewitt National Design Museum in New York City through March 11. If you're planning a kitchen project, my advice is to grab your checklist, and pay a visit. Don't apply. ■

A key design concept for this kitchen was to eliminate wasted space and motion.

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Saving the Ranch

A new kitchen is the key to the makeover of a 1950s suburban classic



At the Louise Lerner house the group of all-white, middle-class people in northern New Jersey, her house embroiled her considerably less. The brick-banded ranch had been built in the 1950s, and although sparse—with few bed rooms and three bathrooms—lacked a certain flair. “I didn’t like that place,” says Lerner. The group moved elsewhere as the ladies “looked like they belonged in a church,” and the pastel tones, blue and all gray piping in the three bedrooms was downright aseptic. But it wasn’t just a problem with decor. Lerner and her husband have three children: Lillian, the ages of 5 and 13, and 17-year-old Sarah. 1970s teenagers at a family room, on one in bed, and a mother bedroom suit with a barbie rather than just a shower. “When we bought the place five years ago, we knew some day we would have a lot of work to do,” she says.

Just how much, she could never have imagined. Sitting down with an aching

圖 1 山崎博士的「*日本書紀*」卷 1 第 1 條

the second "interior lounge," while her husband made sure whatever was on display "fit the occasion," the architect, Bill Kroll Architects in Liberty Corner, New Jersey, was the one to build a two-story branch on top of everything without the owner, he says. After eight months in negotiation, he finally decided to construct a remarkably changed three-plan downtown and an old new apartment and live above from 2,380 to about 3,600 square feet. But it still makes sense to build on top of the original house's foundation and even retain much of the landscape.

Radford as it is, the project didn't begin as a whole-house makeover. The couple set out to simply spruce up the kitchen and add a family room. But, because the bathroom shared a space with two

The newly renovated 700-square-foot exhibit, which occupies a 400-square-foot former room, displays anthropometric glass cabinets topped by loose molding, wps and throughout the house. A dark-stained cherry island contains the end, and a stainless-steel front of the door is covered with decorative molding and a 12-inch square. On the right side of a space of the room.



IT'S GREEK TO THEM

To add a touch of elegance to the kitchen house, architect Bill Kaufman leaned on an ancient Greek tradition by adding classical columns. He chose the simplest design—a column known as *fluted*—and used them liberally both inside and out. A pair of columns bolted out of columns bolted out of columns known the house's neoclassical front door, where they both support a pediment and channel a leader draining from the porch above. Another pair made of polished pine stood in the dining room, where they made a passage to the living room and "define the table area so separate from the main walls," says Kaufman. In the new kitchen-living room combination (see photo), Kaufman bumped out the back wall by 18 feet and added a limestone base supported by steel columns for strength.

These robust-looking

pillars were then

decorated with fluted

columns that arrived pre-

cut. All carpenter Chris

Papadopoulos had to do was

join them together and

seal them with a

preservative paint. "The

columns are there to hold

up the house, but they

also create a little bit of a

definition between the

living room and the

kitchen," says Kaufman.

Columns for the even-

ing-height back porch

re quipped more fluted-

columns because fluted

columns

plying. A jack had to be inserted to hold up the roof while a temporary support was removed. Then, the columns, which were intentionally ordered a little bit longer, had to be cut to the exact length before the back porch was installed and walked in into place. "You get one chance to cut it right," says project manager Al Skarnet. "If it's too short, you've blown the whole thing." And at \$1,000 per column, that's one mistake sure to stir the wrath of Zeus.

couldn't put put on an addition with a master suite above and be done," says Lerner. That would have destroyed the parklike setting, the very thing they liked most about the place.

Instead, they reconfigured the house from the inside. In the original floor plan, there

were two tiny bed-

rooms upstairs and

three downstairs,

making space for a

family room meant

moving the master

bedroom up. "Which

was fine, except I

have three children

and you can't have

one down and two up," says Lerner. "We

thought about taking over the upstairs our-

selves, except then you'd have three kids on

the first floor basically renting the house—

and we didn't like that." Like a domino chain,

the renovation spread from room to room.

The family room and a new entrance hall

ended up replacing one of the bedrooms, and

two more were added upstairs. Along the way, every detail in the

house—from windows to floorboards—changed. Says Lerner, "Once

we started fixing some things, we decided to fix everything."

In redesigning the house, Kaufman made only minor changes to the original back facade on the front and sides but replaced the wide cedar shingles on the back with clapboard as well as shingles cut into a wavy pattern on the gables. The house originally had a three-room—unusual in a rural

reach—but it could not be salvaged during

construction, and the cost of replacing it

was too high. "Somebody mentioned

\$75,000," says Lerner, who with her hus-

band, the cost of the new

back facade was the

space occupied by the old

one. But the new is now

open to an adjacent family

room and breakfast area.

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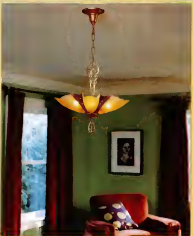


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TRANSFORMATIONS



The rear of the house shows a dramatic change. Aside from a shared foundation and some exterior framing, there's hardly a vestige of the original house, shown, in the new rear, right. Doors from the porch (middle of photo, right) lead into the breakfast area.



hard-wood mated for asphalt shingles with a clay look. "We're not crazy about them, but we sure didn't want to spend that much money on a roof," Kaufman says. The white roof's lower levels by using copper flashing, and even covered the iron black Shingle Style for the house's design. "It's traditional, but a lot of fun," he says.

As in all renovations, some surprises discovered nearly topped up the grand design near the work began. While reconstructing a rear porch that was to be beneath the new house steps, contractor Paul Cuzzo of Haverhill Builders of Winslow, New Jersey, discovered a hidden thick plug of concrete that had been dropped during the original construction. "We spent a couple of days problem-solving that one," he says. But an even bigger problem lurked elsewhere: Kaufman had conceived a spectacular roof that rose up in a shallow pyramid above the two gables in the front of the house.

During the framing of the second floor, Cuzzo discovered that the rear wall of the house was 6 inches longer than the front—throwing the whole house off square. "Somebody added an extra cluster block back in the '50s," he says. That could have made the roof workable if Cuzzo had's come up with the idea of connecting the problem by building a brick column in one corner of the house. At 8 inches wide, it solved the problem, and looks as if it belongs. "That literally saved the roof," says Kaufman with a batch of relief.

As the renovation proceeded, the Latimer became pragmatic about just how much of the old house could be salvaged. Out backboards they had planned to save in the living room and dining room got tossed on and had to be ripped up. Much of the framing on the first floor also needed replacing. In terms of cost, says Kaufman, there may have been some savings in the

Expanding a Ranch

The original plan of the house's first floor, contained in a few floors—namely, six family rooms, six bedrooms, and an entry all but invisible from the street. By shifting the entry to a central location, light, and moving the bedrooms upstairs, architect Bill Kaufman reworked the traffic flow. Formal dining room, living room and den are grouped at one side of the house. Kitchen, family room and the guest room—which is actually used as a computer room by the children—are the other. "What this house needed—in addition to some extra space—was a clear sense of direction," says Kaufman.



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Visiting a kitchen store is an essential—but often anxiety-provoking—part of the home-ownership process. To cut down on the pre-construction anxiety, we went to the store with the Lerner's kitchen, the builder selected the plan in the store, rather than one doing it in the vast land itself. "We were never pressured from the typical store," says construction expert for All Season. "And when you have a store, you don't have a thing."

accuracy but, in the overall scheme of things, it was "probably a work" compared with building a new house.

As with many whole-house renovations, an entire team of design professionals—in addition to the architect—became necessary. The Lerner turned to interior designer Frank Delella of Delella & Associates to take charge of the house's finishes, materials and furnishings, and David Jones of Jones & Jones to design the kitchen.

Delella & Associates is a full-service design firm in Fort Hills. To design the kitchen, Delella & Associates can be pricey. Some one like Delella & Associates charges between \$10,000 and \$30,000 to pick out bathroom tiles and wall colors and shop for furniture for a house this size. For her part, Jones charges a lower fee of \$175 an hour to plan a kitchen. "We spent more money on a lot of headshots," says Delella. Lerner calls the two indispensable. "We don't have them," she says, "I would have gone mad."

Besides planning how each room will look, Delella & Associates made sure that the look carried over from room to room. This subtle uniformity can be seen in the pale white travertine marble on the Lerner's kitchen floor and the busines of a marble color in the laundry, as well as the antique white glassed term-corn tile in the downstairs guest bathroom. "The goal is to have the entire design of the house act as a subtle collection of the exterior architecture," says Delella. "That's a task house owners in the middle of a whole-house renovation just can't achieve alone."

After eight long months of living in a rental house with many of their possessions at home, Lerner and her family moved in their new accommodations. While Lerner takes charge of the work-related kitchen, her children came into the media center in the adjacent family room. She and her husband love the privacy of their upstairs master suite, and their 13-year-old daughter even has a bathroom on the balcony projecting from her room. "It's like a fort like Juliet."

"It's perfect," says Lerner, and all seems—except for the white-garbed man who appears in the living room, the only interior design that carried the makeover. "It always lived it," says Lerner. And now, it's a small part of a house's remarkable journey.

It's perfect, says Lerner, and all seems—except for the white-garbed man who appears in the living room, the only interior design that carried the makeover. "It always lived it," says Lerner. And now, it's a small part of a house's remarkable journey.

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brick goes 100 years, for the way the joints of the mortar outside extend it. Birmingham, Ala. home, landscape architect Richard Long made a similar brick garden in the same way, and it's a testament to the durability of brick.

Feat of Clay

Brick's earthy elegance adds grace to patios and pathways.

BY JACK M. GILBERT

In walking on a brick-paved path, you're on a

of baked clay with a chip off one side and a chunk of mortar stuck to the red. This is a common brick—large, solid and tougher than the tough-skinned clay brick used on building facades—and it's surrounded by hundreds more that make up my path here in Miami. These brick look like some of the "Salsas" I saw made long ago somewhere in the Midwest, possibly near Chicago, where my brick ancestors lived. Probably used as part of a house wall, he said. Now they're long, down, turned under the palm trees in a Florida backyard.

When I decided to extend my outdoor living area into a back but too often muddy yard just one brick, brick was the only material that really made sense. I already have a wooden deck. Concrete doesn't drain through, and why give paradise? Limestone or limestone, common for Northern patios, looks dead in south Florida. Granite, a native rock, is more common and more, would have looked great, but I couldn't justify spending \$6 a square foot for the material alone. The last brick, which was my eye, a brick—how we rarely see them that beautifully rough-surfaced green glaze and brick flowers. And brick is relatively affordable in all. I paid just over \$1,000 for my 700-square-foot garden. I was with salvaged brick even though that cost a bit more than new. I think used brick looks a little more rustic, and it's a little more rustic. These hard-working Germans had my future-shaped patio in two days. First, they dug out 6 inches of topsoil and replaced it with 6 inches of red brick's sand, topped with rough sand—usually at least over 10 feet—so little water runs from the house. Then, with a gas-powered tamper, the stone of the sand and powdered it into a firm base. After they'd laid down a row

PHOTOGRAPH BY RICK OLIVIER



TOP DATA SHEET

Brick isn't just about aesthetics. It's about durability, particularly when building patios and walkways. "On the ground, you definitely want to use a hard power brick," says Tim Old, a brick contractor from Dallas. Paving bricks rated 100 (100 is the highest) are first choice and better than low brick, which are used to build walls. Unfortunately, manufacturers don't stamp ratings on bricks, so consumers have to trust their vendors to trust their suppliers to furnish the appropriate materials.

2 1/2 by 3 1/2 by 7 1/2 inches) At the time of the census, there were at least 30 different sizes in common use, but the number has shrunk to about a dozen today, which makes replacement and repair easier.

The crew edged my garden with side-by-side brick, following the curve I'd laid out with a hose. A few bars of concrete poured just outside the garden held the bricks in place, and sand swept over the gaps fills the cracks and lets the rain drain through.

Lead on the ground up North, three solid, common brick would spill and disintegrate as water seeped inside and froze. Cold climates require hard, "weather-resistant" power brick, and they need to be weathered a deeper hole to furnish frost heaves. In Massachusetts, The Old House landscaping contractor Ragnor Cook says brick should be at least 12 inches, then install a 3/4-inch thick blanket of gravel topped with a serving bed of stone dust. "Stone dust packs better than sand," he says.

Here in Miami, the problem is humid heat, not freezing. Paving has been

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6. **Salvaged Power:** From the 19th century, this brick is made before, and can also be the very best.
7. **Iron Spots:** A brick that's long been used in the very best of brick and green brick a gully, but not, and can also be the very best.
8. **Dark Bricks:** A brick that's long been designed for a house in Berlin.
9. **Dark Bricks:** A brick that's long been designed for a house in Berlin.
10. **Dark Bricks:** A brick that's long been designed for a house in Berlin.
11. **Dark Bricks:** A brick that's long been designed for a house in Berlin.
12. **Dark Bricks:** A brick that's long been designed for a house in Berlin.

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M A T E R I A L S

papers and evocative quickly decay into black masses. (The bay lanes just bounce and roll off into the sea

Mixing the Midwest

From Chicago...



A brick-chasing colony, Illinois also sent lots of workers from a Chicago Company. Laid out on a brick-laying pattern, 1,400 miles north, it was some when a hard brick and concrete in a brick plant exploded. Rob...

Chipped at the concrete and spouted with mortar and old paint, salvaged brick lay back heavily, but in late February these old bricks of clay are a valuable commodity. Fletcher, a brick distributor in Miami, says much Florida is also allowing for brick salvaged from buildings demolished their streets at miles away, in Detroit, St. Louis and Chicago. "I got a lot of it at 20,000 Chicago Companies, and I can't keep them in stock for more than a day," he says. These covered streets-colored brick come in Fletcher via Jeff Finamore, owner of West City Antique Brick in Chicago. Last year, Finamore shipped nearly 150 boxes loads of Chicago Company to Southern who wanted to build patios, walkways, and garden walls. There is almost no market for the brick locally, Finamore says. If left in contact with the ground, they will suck up water and disintegrate after a few hard frosts. Finamore hires place Wilcox, many of these bricks, to do the brick-laying work of salvaging. They have demolition sites for unbroken pieces of wall, piers, arches and chimneys to hammer at crumbling buildings. This, brick by brick, the workers chop off the old mortar—a few with-stand hammer blows in the brick—and stack the brick on a pallet. "Each 3,000-pound pallet holds 250 bricks and takes about 45 minutes to fill," says Finamore. Some salvaged brick—Barnhart Grays, for instance—have become as scarce that they sell for \$1.25 apiece. Michael Hooper, a historic architect in Baton Rouge, Louisiana, says one client bought a warehouse and then demolished it to get all

the Old New Orleans-themed town that Finamore isn't worried about running out of Chicago Companies, which retail at 25 cents each. "There'll always be buildings to wreck," he says. —Helen Brown



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Got Lead?

Smart ways to deal with layers of risky paint

W

hen it comes to working with lead paint, Tom Silas admits he's done plenty of things wrong. "I used to lean a old wood work and sand it until the air was filled with dust," says the The Old House general contractor, who's been in the business for 33 years. "The damage, if there is any, has already been done."

Now, Silas's day of medical reckoning has arrived. He has volunteered for a study by the Harvard School of Public Health to determine how much lead his bones have soaked up. (Lead makes calcium, so bones become the record of past exposures.) Using a sophisticated X-ray fluorescence analyzer, Harvard researchers have already found dangerously high levels of lead accumulation in the bones of dozens of other contractors and hapless home owners; their levels registered high enough to put them at long-term risk of hypertension, anemia, kidney failure and memory loss. "What will they find in Tom? Stronger or a clue at Boston's Channing Laboratory, he flips through a magazine as the X-ray machine beeps, as close as his chest. In a half an hour, he will know.

Lead paint, long recognized as a health threat to young children in blighted urban housing, is now affecting a newly recognized set of victims: home renovation. "Some of the worst cases of lead poisoning I've seen involve whole families in which the parents buy a wonderful fixer-upper, roll up their sleeves, pull out the belt sander and great energy," says Dr. Howard Hu, an associate professor of occupational medicine who is running the Harvard study.

The full extent of the problem is not clear, so no large national surveys on poisonings caused by home paint. But in Massachusetts, a state known for its strict lead regulations, a report documented 382 cases of severe lead poisoning in construction workers from 1991 to 1993, 421 were hospitalized, 172 went to intensive care and 10 died. Another 34 were home owners renovating their own homes. Richard Rubin, who coordinated the report, says the "grossly underestimates" the number of home owners likely to have high levels of lead in their blood. "If they're not tested, there are no numbers," he says.

Such poisonings are completely avoidable. Left undisturbed, lead-based paint is not a health hazard. You can only get lead over your shoulder if you sand, scrape or burn it off. But when you sand, scrape or burn it off, you create clouds of lead-laden dust that can be inhaled, ingested or absorbed through skin. By sanding, scraping or burning off the paint comes dozens of lead-laden dusts that can be inhaled, ingested or absorbed through skin. By sanding, scraping or burning off the paint comes dozens of lead-laden dusts that can be inhaled, ingested or absorbed through skin. By sanding, scraping or burning off the paint comes dozens of lead-laden dusts that can be inhaled, ingested or absorbed through skin.



With its strong blue-black tint, ease of application and self-leveling qualities, lead paint was the primary coating of its day. Blue paint came from powdered lead carbonate, which made up more than half the weight of some paints. Although lead was banned from use in house paints in 1975, a few industrial coatings, such as those for shipping tanks, still contain a small proportion of the toxic metal.

They Got the Lead Out

In the middle of a renovation bill on their house in Belmont, Massachusetts, Kathleen and Michael MacPhail got a nasty shock. A routine visit to the pediatrician revealed that their 3-year-old daughter, K.G., had a blood-lead level of 17 micrograms per deciliter, well above the 10 microgram level the federal Centers for Disease Control considers safe for children. K.G.'s doctor prescribed an iron supplement and a diet high in calcium and iron, and the MacPhails halted work, yet six weeks later, the girl's blood level rose to 33 microgram.

A lead inspection showed they had lead everywhere, so they hired Geo-Tek, a state-certified contractor that has also de-leaded several F.O.R. projects. Looking like the cleanup squad from Chernobyl, with their full-body suits and HEPA filtered face masks, Geo-Tek's crew sealed off work areas with two layers of 6-mil plastic sheeting and duct tape. After three weeks of scraping paint down to bare wood, they disposed of everything on toxic waste, then sanded the house with titanium phosphate (TSP). A final wipe test by an inspector confirmed that the contamination was gone. The MacPhails' investment totaled \$21,000, more than double the cost of a dip-and-replace job, but they have no regrets. "We didn't want future more shams and floundering," Kathleen says. "And we didn't want to gamble with our children becoming brain damaged." —Curtis Axel



A deep hole in the foundation is made to reach any dead-end pipes scraped from the MacPhail house. As Kathleen says, exterior scraping was for show only when the house blew 4 mph or less.

main clue experts were given: sandal. "With one of those, you can really do it on yourself in a day or two," Rubin says.

Paint made before 1950 poses the greatest threat. Dr. Thomas Moore, an epidemiologist with the Centers for Disease Control and Prevention, says these paints often contain so much lead that the dust from a polycrystalline chip just one

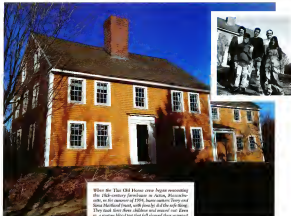
centimeter square can pollute a 10-by-32-foot room. "It's easy to see how a toxin could quickly be concentrated many times above the safe level," he says.

The ones most vulnerable to accident poisoning are not the guys with belt sanders but kids. A New York study showed that remodeling work was responsible for 12 percent of the cleaned blood-lead levels in children statewide. Those less than 6 years old are most at risk; lead poisons easily from dry blood onto their brains, causing long-term learning and learning disabilities and reduced IQs. Fortunately, no bodies normally receive lead, so blood-lead levels will gradually drop after exposure to the metal only. Only in cases of serious poisoning is an expensive and protracted treatment called chelation used to quickly rid the bloodstream of lead. Unfortunately, there's no magic way to purge it from bones.

Given the dangers, getting a professional lead test is crucial. (See Heavy-Metal Detection p. 54.) If lead is present, a home owner faces three basic choices: Live with it (and take some basic precautions), seal it off, or remove it. In any way, the first approach is the best. "If you paint in a good condition, leave it alone," says Nick Fara, executive director of the National Center for Lead Safe Housing in Columbia, Maryland. "That's the smart way to protect your self." Painted doors and windows seal the most intrusion because they create massive amounts of lead-laden dust each time they rub against their jambs. Fara's organization has posted on page 177



PHOTOGRAPH BY BENJAMIN OLIVER



When the Tinsley House crew began reconstructing this 17th-century farmhouse in Acton, Massachusetts, in its summer of 1994, home owners Terry and Susan Macfarland (front, with Joan) did the safe thing: They had three shovels buried and moved out. Even so, a routine blood test that fell showed their youngest child, Ethan, died of lead poisoning. Lead levels probably from dust inhaled before renovations started. "We made a quick decision to do lead," says Terry Macfarland. The \$30,000 abatement involved repainting 20 windows and caulking paint up a mile of the woodwork inside and out. Ethan's lead levels returned to normal; now 20, he's had no further problems. Terry Macfarland says he's glad he was tested and got out of the lead. "20 years is good of mind."

(continued from page 56) level, an average, about 11,000 micrograms of lead per square foot wrapped in the troughs between the walls and the ground. "It's by no means 11 as high as a million," he says. (A level below 500 micrograms is considered safe by HUD.) Five circumstances require a test: walls with a wet stain at least once a month, using an ordinary vacuum could spread a plume of dust inside the house. (See Living With Lead, p. 58.) Old windows, often labeled as lead-lined, and leaded old windows, can be recoated with plastic-glass layers or whole-pane weather stripping, both of which usually eliminate the abrasion that promotes paint loss.

The second option is encapsulation: burying lead in place. This involves coating windows with special lead barriers; paints or covering walls and ceilings with drywall or wallpaper. Merely applying a few coats of regular house paint is not sufficient. Although less expensive and less dusty than full-scale abatement, encapsulation does have its downside: The thick joints obliterate crisp architectural

details, and the joints leave the person, for future generations to witness.

The third route—lead removal—is the most expensive, and if a remodeling is planned, the safer. Then a job for a state EPA-certified lead-abatement contractor—the leading is not a do-it-yourself project.

Even if you are protected with the right respiratory and disposable gloves and clothes, your family and neighbors are still at risk. A qualified lead removal contractor has the equipment and, most important, the experience needed to do the work quickly and safely.

Complete removal is not always necessary. If a renovation is planned, only those surfaces that will be disturbed need to be stripped. Two types of remodeling contractors should take a cue from their lead abatement brethren: "Create as little dust as possible, contain whatever is generated, and clean up well afterward." Then, once the work is completed, a final series of independent wipe tests should confirm that everything is safe.

That's basically the approach Tinsley has taken in the last 10 years.

Living With Lead

Although the amount of lead in paint began dropping in the 1960s as manufacturers used less hazardous ingredients, houses built as late as 1990 may still be lead-laden. A professional lead test is the only way to know for sure. If an inspection uncovers lead, that doesn't automatically mean that all paint has to be stripped. With disciplined maintenance, one can safely forgo the expense of total abatement. When remodeling, however, don't take chances: Have lead paint professionally removed from any areas where it might be disturbed.

Remediation Strategies

- Focus on doors and windows, the two biggest generators of lead dust. Maintain an intact coat of new paint over the old. Include wash down joints with weather stripping or plastic sheeting.
- Wet-map floors and woodwork with TSP or all-purpose cleaner. Do not sweep with a broom.
- Use vacuum with HEPA filter.
- Seal gaps, splintered and discolored wood for preabatement caulking. Wipe furniture with tack cloths or damp rags. Wash children's toys.
- Check the blood-lead levels of children under 6 years old with every pediatric checkup.
- If soil is contaminated, remove or wipe shoes before entering the house.
- Never power-sand, dry-scape, grind or burn off old paint. Use paint deglosser to give old paint enough tooth to accept a new coat. Let a licensed lead abater take care of peeling paint.

Remodeling Strategies

- Not all painted surfaces that will be affected by a remodeling fit these in a lead hazard, hire a certified contractor to remove it before the remodeling starts. Do not attempt such work on your own.
- While remodeling, keep children, pets and pets away from work areas. Better yet, leave the problem until the project is finished.
- Have the remodeling contractor seal openings, windows and work areas against dust, and seal-step completed rooms with plastic.
- Stop work on lead dust when the remodeling is done. —Nancy Poterius

"If there's a lead problem—and there almost always are—I tell the house owner to get a licensed lead tester, and have him lead test it. I don't go over it," he says. If woodwork needs stripping, he prefers to have it removed and stored off-site for recycling, using a small, air-purified vacuum as much as possible. On the T.G.H. renovation in Wiscasset, Massachusetts, he chose to rip off and replace the siding, rather than try to sand it smooth. "Why take the risk?"

Heavy-Metal Detection

Finding lead has gotten faster, easier and more accurate, thanks to new testing technology. Time was, inspectors relied on a laboratory or a chemical-saturated cotton swab to locate lead paint. These methods are still used but have their drawbacks. Lab tests, although highly accurate, can be expensive—sometimes as much as \$3,000—and removing the sample leaves woodwork pocked with little squares. Swabs are cheaper and faster. Just rub one on suspect paint, and see if the tip changes color. But swabs can be hard to interpret, leading to false positives and false negatives. Also, a swab only detects the lead it touches, an inspector or home

owner will still have to gouge surfaces to find hidden layers of toxic paint.

Now, all an inspector has to do is rest a cell-phone-sized X-ray fluorescence analyzer (XRF) against a painted surface and push a button.

In a second, the device displays how much lead the paint has and how deeply it is buried. The cost for a whole-house inspection with an XRF runs between \$200 and \$600 and does not harm woodwork. —R. P.



With a burst of radiation-100 X-rays, Donald Proulx's \$24,000 XRF scans any lead in the paint to reveal its exact signature X-rays, which the device then detects.

THE BILLY CASE

"If I go to work on an old house, and the owners are expecting or have little kids around, I strongly recommend that they have their paint tested for lead."

Finally, the new XRF went it. Tinsley has finished its scanning. With a click, the machine's display shows a steady computer screen. Flash: 15 micrograms. "That's well within the normal range," says owner Steve Olivera. (A reading above 35 micrograms per gram of paint would have been a problem.) Tinsley takes a necessary break of relief—then smiles. "I knew it would be," he says, as he heads off to another lead-safe day on the job. ■

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The Lien Machine

You don't want to get caught in it



W

hen a home owner hires a contractor for a home improvement renovation, chances are good that the job will go well. Then so, disaster scenarios like the following play out all the time: "With high hopes of getting a quality job done on time and on budget, a home owner signs a contract and makes an initial payment. But soon after work begins, the project deteriorates before the owner's eagerly awaiting eyes. The contractor's company, once cool and professional, turns ugly and appears in odd hours. They dump piles of dirt well on the flower beds. At some point, the contractor decides to ignore the architect's plan—springing nothing to the owner—and starts building his own twisted design. Disgusted, the owner fires the contractor midway through the job, refusing to pay another cent. The contractor storms out of the house, dragging metal roofbeams across another part floor. Deeply disappointed and left with a mess, the owner is nonetheless relieved to be rid of his problem. Or so he thinks.

A couple of days later, a pitiful person appears at his door and hands him a crumpled paper reading "Notice of Maryland's Lien." Having only a vague idea what these words mean, he calls his lawyer and quickly learns that the contractor he came to fire, could sue him for home.

Thanks to a legal instrument known as 18th-century American law, court files lodge with lien owners, and among a host of the contractors who have a legitimate grip with the home owner. But whenever the owner and no more in who's really to blame, contractor, subcontractors and even suppliers normally file machine's lien to get money

they believe they deserve. Under the terms of a lien, a contractor can seek to prevent an owner that the owner owes him money and—at least as theory—to collect on that debt by freezing the sale of his house. At the very least, a lien makes refinancing difficult and selling impossible because a lender up on the title report. Worse, failure to clear the claim could result in a default of the owner's mortgage note, setting the lender to demand immediate and full payment.

Even liens, however, actually result in home owners losing their houses or a having to pay off mortgages. Worried parties rather settle their differences before litigation begins or they the court's decision, which often way it goes. But home owners embarking on renovations must be wary. The contractor's lien remains a powerful contractor's tool for harassing our dollars even when the work is shoddy or incomplete.

Home owners have been dealing with liens for more than two centuries. In 1791, President George Washington, poised to build America's capital on the shores of the Potomac, dismissed Secretary of War Thomas Jefferson to organize a commission to start the huge effort. The commission thought it necessary to protect the many laborers working on the new buildings and convinced the Maryland General Assembly to enact the first contractor's lien law.

Today, similar laws protect contractors and 50 states and nearly every city play when there's a valid complaint. However, disreputable operators use the same laws to perpetrate frauds last century and swing money from unsuspecting home owners. (See "Last, Best

Home Improvement Scheme" on the next page.)

In addition to the disgruntled contractor or the predatory scam artist, amazingly unethical third parties can also file a lien against a home owner. Brian and Allen Marziano of Chappaqua, New York, thought their garage addition was progressing nicely until they received a call from a local lumberyard. From the contractor's lien's paid for materials delivered to the Marziano's job, and if the bill wasn't cleared up, the couple might get shipped with a lien. The Marzianos were shocked. "I'd just given the contractor a progress payment, and he was about halfway done," says Allen. "But we had no idea that we were responsible to the contractor's suppliers."

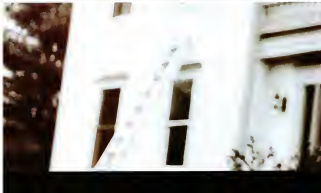
When questioned, the contractor admitted he'd used the Marziano's money to pay off other debts. Pressured with being forced off the job and having his reputation ruined, the contractor wrote a check to the lumberyard. From then on, the Marzianos paid all suppliers directly and the contractor for his labor only.

For even more protection, home owners should get before contracts and suppliers to sign partial waivers of lien as they complete work or make deliveries. By signing a waiver document, which is available in any jurisdiction that carries modified legal forms, the vendor acknowledges that he has been paid. Partial waivers can be issued when the project is finished.

Robert Bowness, a professor at Albany Law School, says that before signing a contract, home owners should consult with an attorney to weed out clauses that could make it easy for a contractor

BY MICHAEL SHAPERO

ILLUSTRATION BY ADAM MCCOULEY



to file a lien. If that isn't possible and a lien is filed, however, suggests requiring whether state law permits so-called bonding around the lien. Home owners with good credit and sufficient assets can purchase a bond from a surety company for a minimal cost (in New York, \$5,000 of bond value costs \$20) and deposit it with the court. If necessary, should the contractor prevail, he could only collect against the bond, not the house. The owner would be responsible for the full value of the lien, but it wouldn't show up on the lender's title report, leaving him to sell or refinance before suing the claim.

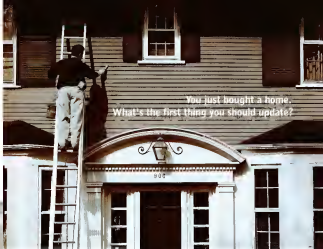
Home owners can employ other tactics to avoid the sting of a contractor's lien, but much depends on the laws of a given state, says Washington, D.C., lawyer Stephen Stephens. For example, he says, a court may not enforce a lien of a contractor like too late, but the wrong work dates, doesn't finally notify the owner when the work started or isn't licensed. Stephens adds that the best strategy may be to stretch out negotiations with the contractor. Litigation on a lien case can consume weeks after the lien, and a contractor deep in settlement discussions may prefer to settle the deadline. However, some states allow deadline extensions of up to a full year.

Legal maneuvering notwithstanding, it simply may not make sense to contest a lien at court unless the dollar amount is large. To avoid getting bogged down in a complicated, expensive battle between lawyers, the best strategy may well be to reach a settlement with the contractor, however wronged you feel, and have the job completed by someone else. ■

Lien, Mean Home Improvement Scams

Any professional has his go-to-do-works, and renovations contracting is no different. A less-than-forebright contractor might sometimes an unsuspecting home owner with high-pressure sales tactics that end with the demand to sign some worthless paperwork. Having failed to read the entire document, the home owner may have committed to high-interest financing or even put his very ownership at risk. If he then refuses to pay for poor-quality or unfinished work and the contractor files a lien, the real trouble begins. Some filings, however, are illegal because the work isn't covered by lien laws. Thomas Stada, an attorney who specializes in construction law, says that most courts and state legislatures don't qualify for lien protection because they aren't permanently affixed to the house. Here are other ways to protect yourself from scam artists:

- If the contractor asks you to sign a security agreement, which is similar to a mortgage or trust deed, refuse and find someone else. Never back your house for deposits.
- If it's a big job, insist that the contractor get a payment bond, which obligates your house from the contractor's time from him, his subs and his suppliers.
- Make sure everything is in writing. Spoken promises won't worth the paper they're not written on.
- Understand everything about the contract before you sign, and take it to an attorney if you don't. Just because the contract is in fine, small print doesn't mean the language is safe to agree to.



Before you tackle the paint job, the kitchen, or the plumbing, the first thing you should update is your life insurance coverage.

After all, with a bigger and more expensive home, you may need to increase your life coverage.

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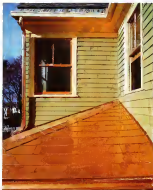
Nothing beats the luster of copper on a roof. The Old House Information Project, the online guide to historic homes, says, "It does look like gold," says T.O.H. contributor Tom Silva, reporting on the restored place as he nails down another stunning shingle. "But in a few weeks, I think this roof will be even prettier."

This "roof" is copper, and Tom is right: In just a few weeks, it will weather from glossy to lustrous to the lovely matte finish of an old penny. After installing copper shingles on the roof of the front porch of T.O.H.'s Queen Anne Victorian in Watertown, Massachusetts, Tom is perched on a scaffold, laying the final courses on the side porch. Watching Tom's progress, home owners Christine Nicksa is delighted. "There's just nothing more beautiful than weathering copper," she says.

And there's nothing more durable, at least in the northeastern world. "We guarantee for 50 years, but the fact is it will usually outlast the house," says Anne Schade, architectural products representative for Stevens Copper Products in Rome, New York.

For centuries, these versatile, long-lived and durable—have made copper a natural roofing choice

around the world, ranging back for the ages from Egyptian, Greek, Roman temples and Japanese shrines to government buildings, museums and some 17th-century American houses. Copper roofs have traditionally been made of random-size or flat-iron panels. Although copper shingles existed in the early 1900s, demand has increased dramatically over the last two decades, thanks to mass production, national distributors, aggressive promotion and consumer demand for quality materials. Properly installed, a copper shingle can last a lifetime. The shingles have a flat, j-shaped—that hook under and over each other, creating a solid roofing system that effectively sheds water. Shingles cost more per 100 square feet (a "square" is roof's parlance) than panels but are less expensive to install, as installation is often roughly the same. "The shingles don't require the specialized equipment and highly skilled metalworker that installing panels does," says Schade. "For a carpenter, the installation technique is familiar." The shingle



New copper shingles, of course, make a patch roof of The Old House's project in Watertown, Massachusetts, look golden. But they're not just for show: The most durable roofing material, copper doesn't rust, rot or break.



revolution is one of the reasons that the average of copper sold for roofing has risen an average of 8 percent a year since 1992.

However, because copper shingles last 50 to 100 years, Chris Dullman, an architect in Cambridge, Massachusetts, feels that completely covering the Watertown roof with them may not be the best choice. "I can be using them for architectural banding at the edge of a house to keep off another material or for a small roof, a cupola, a vestibule, something like that. The copper can last by being a level of detail, richness and elegance to a house."

Nicksa agrees, which is why he chose copper shingles for the porch but will leave the old slate roof on the main roof. "These shingles would be obscuring exposure to the roof, the entire roof line, as an accent, they're worth it and really shining," he says. In this situation, they'll also have a different value: In winter, cascading shingles will

scatter the patches' original slate roof so that it doesn't weather, the copper shingles may last but won't shatter.

The blending effect of a new copper-shingled roof begins to show just a few days

after installation. It at the roof may need from five to 30 years to take on its full green patina. Before of Liberty green, depending on whether it's in the sun or in the shade, it can be a deep green or a lighter green. It can be a deep green or a lighter green. It can be a deep green or a lighter green.

Schade explains that the patina is simply a layer of copper oxide, and the color transformation doesn't mean the copper is failing. "The green isn't at all comparable to rust, which goes into the heart of the metal. With copper, the patina

actually protects the surface from further weathering."

Good thing too. While the shingles on the Watertown house don't cost as much as gold, they are sufficiently expensive that Nicksa will appreciate their longevity. The total price of enough copper shingles to cover a square is \$465. With installation, that climbs to at least

FOR MORE INFO

"To make sure you don't mix metals, the manufacturer supplies copper nails in the shingle box. Use them."

\$790. By comparison, a standard asphalt shingle roof comes in at about \$150 per installed square.

Don't take the long view. "You're looking at a durable choice of roofing, but this is basically an indestructible product. It's going to look great for a long time."





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LETTER

From *This Old House*

TO THE RESCUE

M

ost of us love the charm of an old house, but we find

nothing charming about oxidized kitchen and bathroom. So it's no surprise that the driving force behind most renovations is the need to update these rooms. Virtually every *This Old House* project—including our current one, a Colonial Revival cottage in Key West, Florida—has sprung from this need. But not only are kitchens and baths the most renovated rooms in a house, they're also the toughest to do, not to mention the costliest. Consider the mind-boggling array of kitchen choices. Every conceivable style range or cook line runs over. Electric self-cleaning convection ovens, microwaves or broil griddles, even built-in toasters, warming drawers and modular deep fryers, toasters and griddles. Mainstays built-in refrigerators or cocktail units with separate freezers, refrigerators and chiller compartments. Stainless-steel or porcelain dishwashers. Trash compactors.

Reverse osmosis water filters. Low-voltage lighting. Countertops in granite, marble or concrete. The bath is only slightly less daunting, with both American and European manufacturers offering a wide variety of fixtures, fixtures, showers and lighting. Sound astounding? It is. And we haven't even begun to talk about the really tough part—design. It's enough to make a lot of readers and viewers with the *T.O.H.* team would magically appear on their doorsteps and resolve all the dilemmas that kitchen and bath remodelers face.

With granted. The month, we're launching *House Calls With Steve*, highlighting a reader's project in each issue. Just send photos of your problem kitchen or bath to the magazine, along with a brief description and budget breakdown. We're going to tackle large and small renovation jobs with both local and modest budgets, so don't be shy if you don't have enough to spend. If we choose your kitchen or bath, I'll drop in on you personally, anywhere in the country. Along with one or two local experts, we'll discuss the pros and cons, deciding on a look and the appliances and fixtures that will help you achieve it, all in a package that fits your budget. For starters, you might pick up a few tips from the first *House Calls With Steve* (page 33), in which I put the Rhode Island School of Design's experimental kitchen to the boulevard test. We hope *THIS* magazine's renovation appliances, work surfaces and design ideas inspire you to send us an entry. Good luck, and we'll see you next time—at your old house. —Steve Thomas



Leaving out an old sink or built-in is a lot to do in one day.

Send photos on your project to *House Calls With Steve*, *This Old House* magazine, 1183 Avenue of the Americas, 23rd floor, New York, NY 10036.

PHOTOGRAPH BY PASCAL BLANCON

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During that time, Nolen took the stairway back to its original position and made the stairway much, which remains the stairway is located where the old stairway was, and he made a connection between the new kitchen and the stairway.

beautiful old house," Tim adds. "Usually every surface is new, but that first doesn't require it. It looks up first, not down, and that's the ultimate in restoration."

Scrolling to the backyard, Mowbray notes that Tim's crew rebuilt major portions of all three porches but says the truly Herculean task performed out here is invisible. "The herb drainage system was awful. It was a poisonous situation for plants. Willows and weeds were terribly all that would grow." With a relentless network of perforated plastic tubing and dry wells, Z.D.H. landscaping contractor Roger Cook resquashed the backyard weeds. Each work may seem decidedly a waste, which is why some general contractors skip it, Mowbray says. "But it was crucial. To grow a decent tree here, it had to be done."

Catching around to the front and standing through the door, Mowbray wears a hand at the property's single biggest challenge: relieving the square inch with way from the back of the house to the front and rigging the two superlative stairways in the process. "We'll always remember this project as the one where we moved the stairway," he says with a sigh.

Aside from exterior work, the front porch didn't change. But the area's 1910 rear addition was radically altered—and eventually repositioned—by a kitchen flanked by a dining area and a restaurant bar's pantry. Originally, the kitchen was dim and dark, crowded on the house's dark north side. Now, the room stretches 27 feet across the back, on east, side of the house, where light floods in each morning. No fewer than 16 overhead recessed lights bathe the space in a subtle, variable glow. "It's up to us to make it work," Nolen says.

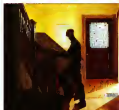
The product for cutting out the house's Victorian shadowed in the property's most controversial area: the new interior skylight over the stairwell. On one episode of the television show, Steve, Norm and Tim made no secret of their dislike for the \$5,500 overhead window that Nolen insisted Tim install. In that case's case, any light generated would be reflected by the stairwell's runnel before reaching the ground floor. And there was concern because the 1-by-4-by-6-inch skylight had in its once-a-day spot on the complex roofline, just above where a low ridge crosses a roof plane. "It was a little tricky," says Tim in a characteristically understated manner. Before seeing through roof rafters to make room for the skylight, he said, engineered lumber beams, spacing from one interior bearing wall to the other, to prop up the ridge beam on one end. "Otherwise, that ridge would not be keeping out there, sitting in the beam," he says. The result paid off the effort: The skylight supply eliminated the lower of the second and third floors, which was Nolen's primary aim. "The skylight works. I'm hoping to fix my wrong," he says with a good-natured grin. "I think the guys were totally right." Tim nods in agreement and says, "We played with Christmas a little bit. But we did an experiment where

A S T A I R

When home owners Christopher Nolan and Susan Dwyer decided they wanted to replace the Victorian house's three upstairs stairways with a single central one, this 20th-century contractor Tim Mowbray hatched a unique plan. He would move the grandest set of stairs—13 marbled steps of quarter-sawn oak with oak treads, a golden pattern of cracked stone—from the back of the house to its core.

"Whoever built this staircase took pride in his work," Tim says. "I was all hand tools in those days. This stairway represents a lot of sweat. The old-growth lumber is still strong, and it's so dry that it's completely stable. In all our jobs, we're always looking to create something new."

Such a policy saves time and headache for a house, but the major advantage in this case was financial. Moving the stairway took almost as much time as building and installing a new custom-





With the first flight on, the next job in the kitchen: replacing one of the old landings to fit the new layout. Once the new stairs are installed, what had served as the north staircase (seen in the rear of this picture) will be history.



called one but saved \$15,000 in \$15,000 in materials and labor.

T.O.M. master carpenter Tom Adams likes the fact that the original stairwell had four stringers.

Believing the main staircase was the key to the new floor plan, which turned it to be both of any room into a deck, open, easily accessible mouth of large glass, in keeping with the spirit of the house. "Originally, the house presented you with an impressive view," says Tom. Old House producer Bruce Levine, "Now, with the beautiful staircase just inside the front door and a hall that runs from the front to the back door, you get the sense of the house the moment you step inside."

Only 10 beams served in a zigzag pattern, supporting the stairs. Adams just 12 beams as cables. "They, you'd mostly use just these," he says, and they'd be exposed at least 30 inches on center, which makes for a beautiful, modern style. He also likes the (heavy) capitals. The stairs and beams meet with a wooden deck and a red brick path, so "even if the wood and floor were

or shrank, they stay locked together."

Entering the stairs from their original spot proved surprisingly easy. Tom's first step was also used as one that many remodelers skip to truly illustrate design. With running tape and a marker, he meticulously labeled each part's location. (The balconies, for instance, were labeled "1" through "28.") It's tedious but it helps you avoid a guessing game later," he says.

During the actual

demolishing, Tom says, "The worst is thinking of how it was built. Then you take it apart

in reverse." Working a reciprocating saw, he slipped its articulating blade between the trim and sillboards, between the ribs and beams, anywhere that he could sever them—the rest of metal or wood signified that the blade had found its mark. Finally, he sliced through the big nails holding the stringers to the floor joists above and below and to the two landings.

Reconstruction was the real challenge. The stairway that had originally wound through the house's center took a detour,

snapped around a passage, the southeast of the original stair staircase. After ripping that out, Tom and his crew built a rectangular shaft to connect the wider stairs. An intricate operation, it involved sawing a heating hole about 30 inches south. "I started by building a new concrete footing in the basement. Then we built a new footing wall structure on each floor, from the center to the rest," Tom says.

The stairs themselves also required refiguring. While the original wall had been a square "J" configuration, the new wall required them to form a square "U." The original three bottom steps remained at the bottom in their new location, but the second set of three steps became the top flight. Simple enough, but the old stairs had been built-in to place—meaning that the 1014 carpenter had cut the two landings to hug the set-of-square ledge—meaning their first location. "It took a lot of refiguring, repositioning, according to make the landings fit," says Tom. "Actually, I had to get out of a leveling algorithm. It took a new one and re-ordered it with the oak from the old landing."

With the new post, rail and balusters installed, the new stairway opened the heart of the house—especially with sunlight pouring through the new skylight, making the heavenly oak glow. "Before, those horizontal slats were hidden in the back of the house," says T.O.M. host Steve Thomas. "Now they're celebrated, as they should be."



we covered up the skylight, and it made a huge difference. Putting it in was the right thing to do."

In typical T.O.M. fashion, top-notch structural and systems upgrades underpinned the visible improvements. Descending into the finished-walled attic, Tom pointed at the roof beams corner, where he and Norm team away and replaced 21 feet of trussing sagged and, to top water from leaking into the basement, Tom had a trench perforated around the inside perimeter and a French drain installed and connected to a new pump tank. From there, water travels ten days with some using a 1/2-inch-wide concrete barrel, 4 feet wide by 4 feet deep, made in a bed of gravel.

T.O.M. plumbing and heating contractor Richard Truchess and his crew removed the two since 1922 gas furnaces and the tapping hot water tanks and extended every inch of lead, galvanized steel and brass pipe running through the house. Richard and master plumber Ken Colwell installed copper supply and vent lines that appear for water, plus a complex heating

system. Two-inch-dia. "microduct" forced air runs the second and third floors, while radiant heat tubing keeps the kitchen warm from a swimming 32-degree Fahrenheit. "This will be a beautiful kitchen, you know," Richard says.

The gas boiler that powers everything is, Richard says, "hardly for the house. Originally, the house had a total of about 400,000 Btu for both heat and hot water. This was ridiculously oversized and inefficient. Most of the time, this system will run at just 120,000 Btu. I'm confident that the gas bill will be cut in half." He adds that the heating, cooling and water systems are all "stately slaves. They're the mark of good work."

Allen Gallant, the electrician, upgraded the service from 100 to 200 amps and installed 6 miles of new wire through the building. Nolan originally wanted the breaker box in an upstairs hallway, Gallant says, "so he could get it in easily if a breaker tripped. I told him when I tell all

my customers: "If, after the way I have wired this place, you ever trip a circuit breaker, call me—I will personally come to your house and flip the switch for you."

"I'll take you on the line," says Nolan. "I mean it," Gallant says. "If you're paying \$50,000 for a new electrical system, why not make it right?"

Nolan's rapport with Gallant—many other contractors on the job—was forged during the course of 12-hour days spent side by side with the masters. Nolan and Dewey were on-site every day, disassembling walls, painting the garage, stripping woodwork and shipping supplies from the first to the third floor. "The house came on here long past midnight," Tom says. "They really worked hard, and they were right on the same when someone had to make—what made our job a lot easier."

"The house looks uplifted not rebuilt, and that's the ultimate in renovation."

"He loved every moment of it," Nolan says, and that's for sure. While Nolan and Dewey's emotions did ease things, their sweet equity pales before that out of pocket expense, which Nolan paid at more than \$150,000—\$110,000 more than the original budget. Ticketed into the \$170,000-plus price range, the house cost roughly \$1.2 million.

That's hardly small change. But for a seven-bedroom, three-and-a-half-bath, four-carriage, dream-house, ready for the next 100 years house 3 miles from Harvard Square—where comparable houses go for \$2 million—it's not bad. ■



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They're swimming, feeding on the marine snails on the reef and in the bay. One of the boat's most docile members, *Chelonia mydas* (the hawksbill), is 100 lb (45 kg) and 3 feet (1 m) long. "It's a cold-blooded animal; the water-cool can warm through all day," she says. In the spring, the boat's five turtles will arrive in a green procession of two, three, four, five. To reside this quadrant now, Tom removes four leather seals and installs a dismounted reverse-lever beam to support the marine snail rack.

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The saga of a family
that wanted all the
modern conveniences-
and character too

A NEW OLD HOUSE

BY RICHARD CONNIFF
PHOTOGRAPHS BY GUY KLOPPENBURG



The classic wrap-around porch on a Dutch Colonial's new house is also wrapped and finished. It's not connected with modern, but it's not a modern addition either. It's a perfect blend of old and new.

I was the last bone of the last day we lived in our old stone shop captain's house, and we were about to shut the door behind us after 15 years of getting, tripping, strapping, smiling and painting. The house, a ruin when we moved in, was now perfect. It had history (built in 1825). It had character (we'd found abandoned lower beams, from an Italian country, in a quarry's attic in the attic). It even had ghosts—by the time we were done. I'd given the new owners solemn instructions on the care and feeding of our house, plus a small to do list. And now my wife, Karen, and I had our other children—Joan, 14, Ben, 12, and Glen, 8, moved to the security of an old stone house—felt suddenly homeless.

In a nearby town, we had a piece of land suitable for construction and, just around the corner, we had a house suited for the case.

Just then, with perfect timing, our architect, Scott Sammons, showed up and laid out the plans for our new house. All the of us stood around him in an empty room in our old house and began to work through the blueprints. Sammons' design had all the defining elements of an 18th-century Dutch Colonial—mostly a raised roof, a tower with a windmill peak, an open-plan interior and a long wrap-around porch.

Our building site was a wonderful lot on the Cassinawater shoreline, looking across a salt marsh to Long Island Sound. The site was to build a house that felt as if it belonged there, a house that had as much character as the one we were leaving behind. We wanted an old house—but without the asbestos, the lead paint, the dark redible walls, the stinking from rotten corners. Maybe it was a contradiction in terms. We wanted all the modern conveniences—and character too. At least on paper, Sammons' drawings gave us hope in the blackest moment of our departure. So we said good-bye to our old house, moved into our school-year rental and headed down for two months of construction misery.

One thinking about the new house was skipped largely by a part of the old house we'd selected so affectionately as the "sky

room." When we bought the old place in 1982, it was a late Federal beauty gone badly to seed. The former tenants seemed to have vented their frustration by kicking down doors, applying ball point markers to moldings, and intentionally soiling carpets. But working, some of us in the special details of the sky room in the low floor.

The house was built into the side of a hill, and the sky room was largely below grade. It was a series of walls with a concrete stone border blocking the window and most of the paper (rising at eye level). The wood floor stood on fangs, some rabbled joints, which stood on house stone piled on bare earth. The window that we bought the house, the worst one in 100 years old, and we could hear little waterfalls gushing through the stone wall in back.

For tend to look out the memory of old house upholds that Karen still remains one of our nearest I spent along a single summer to work apart the old heating system while our son Joan, who was then two months old, so filled through a air circulation system. The house gave me evening nightmares in which I opened the door from the sky room only to discover another and then another, with rain falling in the walls.

But memory lingers on the finished product and, by the time we moved out, the sky room had become one of the most beautiful in the house. The selection was simple though costly. For me everything, and build a new room inside the stone walls but with surface details visible in the ground. In place of the rotten floor, Karen and I dug french drains around the room, then put down granite, a plastic vapor-barrier, concrete, Zell stoneware, and a plywood subfloor and finally 16-inch-wide pine boards salvaged from the attic. Everyone thought the pine had been there forever. And thus the precious thought took over. Why not keep the sky phase and just put the period details on top of a solid, modern foundation? Why not, in short, build a new old house?

The idea took root, I should say, in my wife's head. To me, the great satisfaction of living in an old house was knowing that, at some point, had perhaps even such great port and cement molding, tended to its ruinous and made it well again. I doubt that anything in a new house could ever give me the same trans-



Twenty years after we built our new house, the old house is still a beautiful sight. The Dutch Colonial's new house is also wrapped and finished. It's not connected with modern, but it's not a modern addition either. It's a perfect blend of old and new.



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frankman

TREE FRAMER

Jack Sobon builds storybook houses that celebrate nature's unpredictable curves

The house is full of trees. With half the frame erected, untamed tree-pieces already abound. In what will be the living room, the crooked trunk of a great oak holds a 400-pound pine beam stiff with its two 5-inch-thick arms, like Atlas supporting the universe. On the second floor, four poles of gracefully engirdled timbers—two of pine, one ash, one black cherry—arch 20 feet end to end at the ridge, resembling

BY BRAD LEMLEY PHOTOGRAPHS BY MICHAEL McLAUGHLIN

the ribs of an inverted schooner. In the future entry hall, bathroom and laundry, poles of Eastern hemlock brace a barge with burls, awaiting floggers to explore their swirling grain.

On a sparkling morning in the Berkshire foothills of western Massachusetts, 128 volunteers have shown up to help Jack Sobon raise an extraordinary home of his own design, the frame made lasting with rounded, bent, forked, knobbed and otherwise idiosyncratic tree trunks and branches. Now, a team of 22 men and 5 women—swelling in a redneck engineer, a lumberjack, a welder, an architect, a nurse and an arborist—work in a snap—stands up the line of four 2,000-pound assemblies of poles and beams that will support the main part of the house. Each 24-foot-long section, as it drops with a shock into position clanked into the dirt, incorporates a new surprise, a new curve asserting itself against a rectilinear world.

Sobon is a big, robust guy, 63 years old, his hair thinning, his eyes and nose lined by a life lived outdoors. After prying a knot against a pine post and grunting as he pushes the timber place, he tips back his Shaker-style straw hat and runs a hand across the light white grain of a forked oak branch. The oak will never be finished with paint, stain or oil, and will breathe its pores. In most of the 50 build-ups Sobon has designed and erected since 1980, the tree forms become as smooth as oysters as he skillfully combs them through the post. "People are scared for rot, for insects, for something rot," Sobon says. "That's why they come on us."

He calls his style Organic Modernism. "I make storybook houses. I've actually had clients bring in children's books. They will show me a picture of the cabin family living in a warm rustic situation everywhere and say, 'Something like that.'"

Sobon happily edgifies, incorporating various tree parts into nearly all of his structures. Sometimes he harvests them from his own 73-acre wood lot near the western Massachusetts town of Windsor. Sometimes—as in the case of the elm—he takes them from the land on which the house is built. Sobon frames many of his houses with cranks: the old English term for curved or diagonally set timbers that form both walls and roof. His master room divides out of whole trees. He makes collar ties out of beams with sweeping curves. He makes balconies out of peeled staves. In his own house, even the toilet paper holder is a centerpiece as a sloped pine branch perfectly angled to support a roll of Charmin.

Out of reverence for their natural forms, Sobon prepares them for assembly almost entirely with hand tools. The pace and rhythm suggested for today's raising is typical of all of Sobon's projects. After an oak is hauled the logs out of the woods, Sobon, his assistant, David Swenson, and apprentice, Neil Gables, spend seven months be-

In addition to the "128" crew, a house in West Dept. Massachusetts features a "lumber camp" during its raising. The crew members (from left, top) are: an oak, red maple, white pine and American hick. "Living with them is a joy," says house owner Kathleen Williams.

ing, stitching, heming and plating the 330 pieces of this frame, each knob glistered from the markets and antique tool dealers' showrooms, quakerware, brocade, bathtubs, boring machines, hand planes, clamping tools known as boxes and huge number chests called chests & drawers as his noble orders? Sobon laughs. "Mer at all. We'll naturally argue over who gets to work on a corner post."

Sobon, then, backs a road. While he celebrates nature's unpredictable curves, nearly all of the modern building profession sets as a high-powered curve: success means outrageous. The bigger the veils, only the outrageous ones in the future. Carpenters, among others, build for even de a calder way, secure them in floors, walls and ceilings, employing dozens of trades to nail, screw and glue them into place, perfect harmony. Lastly, the harder to acquire roof eaves is his awkward reach that the space in the forest and the springs in the wall bear an instant balance to each other. Now trees are chopped, relocated and preserved into identical 12-foot, laminated veneer lumber and oriented strand board, straight as a rail string. All that remains of the tree's original integrity is the flake, and in the case of particleboard, not even that.

But it's all wrong, says Sobon. During a break, eating his veg means lunch of beans and macaroni salad, he surveys the forest with obvious pleasure. Already, the crowd of volunteer house owners is churning. Kids peek through the branches. These people quietly rule the

hills. Chances Ellen Graham, who will live here with her husband, Tom, and their four kids, is almost beside herself with delight. "Do you think anyone who wants any house will ever be able to forget it?" she says. "It's just amazing."

"In houses, in architecture, everywhere in this age, everything is mirror like, straight, perfect, coated with black surfaces," Sobon says. "More houses everywhere are like hospitals or like social rooms. I honestly think that's why people move away three or four years. They have no connection to their home. It's just another sugar coat, meaningless. It's not relaxing these lives."

"We go into the woods with the chains, pull the trees and cut them down. They get to see the trees growing and growing. They are in a working, no these covered members with hard knots. They're just unused, a concept, a luxury that they're hoping as much as they're hoping the house will."

But the truly transformation experience, Sobon says, is living in a daily, intimate contact with the wild tree forms. "Then we don't

have sharp edges and perfectly machined surfaces. Our houses should be like we are. We need to move toward graceful, curving members with subtly modeled outlines. Your people like natural forms, the look of a wave, a mountain, a snowflake, a tree branch. Who doesn't feel better walking in a forest path instead of down a corridor in an office building?"

Kathleen Williams, whose house received a Sobon-designed add-on in 1993, is more succinct. "It feels like the trees are still alive," she says.

Back to work. Sobon drives the ground crew to a left 300-foot 30-foot long top plate with position for installation. The fact that Sobon released his own 1-form design's means preparing these timber was simple; it was, in fact, considerably more challenging than traditional lumber handling, in each round or segment, even her hair to be custom-scribed and carved to go in neighbors. And when the group low on this plate over a complex room divider made of two parts and Sobon whisks them up with a huge wooden roller he calls a "comando." 18 workers take over 18 minutes.

Perfectly.

"What," says one worker, "Pocahontas fit?"

All day, even more about Sobon plans at the place as he directs placement of a round-headed staircase of pine old poles, principal posts, heavy posts, rail beams, angled posts, pulley frames, lots to turn, roller

rafters, dormer posts, crank jacking, and less to jacking. "What place?" he says. "I've built their place a dozen times in my head."

A conversation on the house's work tells them his answers. "The carmel with those cracks," Sobon says at night as he begins to make his way up to the second floor. "It's better to take the crack off your knuckle than to remove one of them."

The guys didn't, but their movements become more delicate, respectful. When they hammer home the head-curved oak pegs that fit the cracks at the floor and roof peak, they're left with a mark.

Snowmelt, as Sobon took over his previous members, he has to travel at the way. Growing up some 25 miles north of here in Ansel, Massachusetts, did not of a heavy equipment operator, he lived as a small as a hillside on a large summer stream working his old demands of the river's curved and full but things. "He'll grab

them with their crane chain and rip them apart, and now I'm putting them back up by hand," he says with a wry smile. "Back then, I thought what he did was so cool. It was the '60s, and everyone knew these places were urban. Enough cool."

Always a complete builder, at age 10 Sobon spent weeks re-creating the downtown of Manhattan, Boston and Albany out of plastic blocks, pouring over encyclopedias and maps to make sure every detail was perfect. From age 12 on, Sobon dreamed of designing glassing skyscrapers or mile high dams, his imagination fed by gas who famous vision in Popular Science magazine.

But midway through his architectural training at the Rhode Island School of Design, he grew disenchanted with the pretentious advice of postmodern designs. "I realized that there was nothing real about it. It was all just for effect. Students would follow like sheep. There was a whole crowd—the black clothes, party shirts, wire-rimmed glasses people—and they would copy whatever strange idea was taught." Our professor, he recalls, mentioned a particularly monstrous landscape treatment called a bouquet, which involved planting trees in a grid and allowing their roots to form perfect planes. "It's like living on top," says Sobon. "When the students were assigned to design up a landscape for a town on Martha's Vineyard, he said, 'Everyone's plan but mine featured a bouquet. It was naive. The town was laid out during the postwar wage movement, so an artificial landscape like that was completely inappropriate.'"

Inspired by the narrow removal of post-and-beam architecture, Sobon took a summer job in 1976 with timber-frame-barn specialist Richard & Richard, dismantling old barns and then reconstructing them into homes "mostly for wealthy urban types," he says. "I had originally thought that old barns were to preserve, but the more I did over time, the more I saw that those guys have more than we did." One example Sobon noted that he saw—a tapered post used to splice two or more short beams into one long one—was never placed directly over a post, but rather over a post's diagonal brace. "It doesn't seem sensible, but if you do the bending sequences, that turns out to be the optimum place for a

wood joint. More modern timber framers put it over the post, but that's absolutely wrong. I heard dozens of things like that."

Increasingly, Sobon found himself lying with craftsmen from a bygone era. On his own as a contractor in 1980, he devoted himself to a 12 by 15 foot model in Richmond, Massachusetts, using only hand tools. "Everyone told me it was crazy, but my gut told me it couldn't be as hard as we think it was. People had built structures this way for thousands of years, and they weren't super

human. I built it, and I made money on the job. I had to to respect the old tools. A stone chisel once said, 'These tools are a lot heavier than your work,' and I think that's exactly right."

In 1991, Sobon entered a crack framed cottage for his girlfriend, Susan, retreating the medieval practice of forming both walls and roof with beam-runged timber. As perhaps the ultimate statement of timber construction, Susan married him. He went on to build six more crack structures. The Graham's will be his eighth.

"I guess I'm Mr. Crack," he says. "The crack isn't just a crack, it's a way of living, human being."

At 8:17 p.m., Graham enters the last peg into a rafters' corner, work his carefully laid rafters, driving the screw in for the last night home, suddenly looks himself

carefully opening on his head on the center of the frame, asking something like that needs doing. "Is that it?"

he asks. Scattered apple core breaks are among the crew. They've entered the frame of a five bedroom, three bath, 2,500 square foot house in one day, and the sun still hangs just above the foothills.

Sobon examines through the ground floor. Many modern timber-frame are made from a single piece of wood—oak or Douglas fir, usually—but he follows the old practice of mixing species to maximize their strengths and stress relief. variety. This house incorporates white pine, red spruce, balsam fir, Eastern hemlock, and maple, sugar maple, American beech, white oak, black cherry, American elm, Eastern hop hornbeam, white birch and yellow birch—it's an Eastern mixed wood forest in a house. Timber framers also tend to use just a few beam sizes—only 8x6s and 6x6s, for example—but Sobon employs at least a dozen sizes, crafting the more delicate structures such as dormers with pieces



The finished frame follows a longtime dream of owner Ellen Graham. "It's a true joy," she says. "It is, the house feels natural."



Working a 10-pound maple mallet, Sobon drives home a hand-carved nail. He often constructs details by hand, so that joining in the pegs shows the joints well.



Joined by some of the 130 volunteers who helped save the house, Tom Graham poses within the frame he made up the frame by offering a peg design to the peak. "We used some community members in the society," says Sobon. "The many Americans close to their garage at night and just close their door."

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is small as it is. It is a house of old pieces with built-in work. And it's big - big work."

Atkinson, he says, doesn't really know of the people who design and build their houses. "If you were out of your house, this house is a failure. Forget about job changes. They should be master. If people had the right house, they would change careers before they changed houses. A good house will inspire you. It

will encourage you to put down roots. You'll build a garden and animals. Maybe you're not people who live in a house like that, and you're not. These people are go-getters, they're so energetic. Wow, look at what they've done here!"

Solow looks through the framework into the trees. "Maybe they're a no different from you," he says. "Maybe they just have the right house." ■

Dreams of playing on this field someday.

Dreams of mowing this field someday.

STONE

Stone is a tough, reliable, and beautiful material. It's been used for centuries to build everything from castles to bridges. In this article, we'll explore the history of stone and how it's used in modern construction. We'll also look at some of the most beautiful stone buildings in the world.

Stone has been used for thousands of years. The earliest stone tools were made by our ancestors, and stone has been used for building ever since. In ancient times, stone was used to build temples, palaces, and fortresses. In the Middle Ages, stone was used to build castles and cathedrals. In the 19th century, stone was used to build bridges and railways. Today, stone is still used for many different purposes, from building houses to creating art.

One of the most beautiful things about stone is its texture. Each stone is unique, with its own shape, size, and color. This makes stone a great material for creating art and architecture. Stone can be used to create a wide variety of different styles, from rustic and traditional to modern and minimalist.

Stone is also a very durable material. It can withstand fire, water, and weather. This makes it a great choice for building structures that need to last for a long time. Stone is also a natural material, so it's a good choice for people who want to build with eco-friendly materials.

There are many different types of stone, each with its own characteristics. Some of the most common types of stone used in construction are granite, limestone, and sandstone. Granite is a hard, igneous rock that is often used for countertops and flooring. Limestone is a soft, sedimentary rock that is often used for building. Sandstone is a porous, sedimentary rock that is often used for landscaping and construction.

Stone is a versatile material that can be used in many different ways. It can be used to build walls, floors, and roofs. It can also be used to create art and landscaping. Stone is a beautiful and durable material that has been used for centuries. It's a great choice for anyone who wants to build something that will last.

102

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102

FACED

When stonemason Delfino Ventura steps up to the concrete wall and lifts his right hand, he has no idea someone is watching, so what he does next is doubly absorbing. Eyeballing the stones he's already put in place, he traces the thin flowing line of a mortar joint with his fingers, moving them back and forth on the wall swiftly, gracefully, rhythmically, swaying his body like a conductor in front of a silent orchestra. When he knows how the stone melody will continue, Ventura picks up a nearly 2-foot-long rock, hurls it into place, checks the fit and marks it with a bit of rubble. Then he lowers the 50-pound hunk back to the ground and begins chipping at the edges with a mason's hammer. By the end of the day, he'll have done all of this 100 times.

Ventura is laying up stones along the wall that forms the long, south-facing porch at *This Old House* magazine's Wilton, Connecticut, Dream House. When the job is done, most of the exposed foundation will gain a fieldstone veneer and project the illusion of a solid-stone pedestal.

Dressing a foundation with rocks gathered from fields and riverbeds gives bland concrete a lively expression

BY JACOB MCCLINTOCK PHOTOGRAPHS BY JOHN DRUSE

More Rock

Fieldstone foundations often have uneven shapes and jagged but, with a stone veneer, they can stand out on their own. The ridge for a concrete foundation not only the stone and a way to support it but also a score over the top surface to keep water from seeping in behind it. At the Dream House, a double-rydlock angle iron bolted to the foundation with expansion anchors will support the stone on a triple-line wall that rises no more than 8 feet. The bottom wall will form out over the top of the 8-inch-thick stone, a concrete's double-bay design. On a house where a stone isn't practical or appropriate, the stone can be placed into a rock slot to reduce the stone-to-stone transition to a minimal bump-out that can be covered with landscaping. "When you look at this stone as it sits, you can barely tell it's in it or it isn't there," says Bob Kline, a general manager at O&O Industries, a Topsoil, Connecticut, stone distributor. "Only the natural colors give it away." Whatever the thickness, the stone must be held in the wall with a minimum two-inch projection with expansion anchors every 4 feet.





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FOOT NAME IS NOT RECORDED IN THE RECORDS OF THE RECORDS



over the house usually display prominent patterns and trends. For example, in the above case, the first three sites at The Old House project were Westerns, Massachusetts, and Illinois, but the fourth, Devon, is a southern state. And the first two and last, the brick town, Salem, follow the river, one at a river confluence (Salem) and one at a T-junction (Devon) and the other two at a river bend. The first group of sites was chosen only for its size, geographic spread, the wide range of sites, and the children usually decided not to spend money on some of the sites, even for some. But now the children can choose to become, and it was up to T.O.H. to choose the sites. The children were given the choice of 10 sites, and they were able to choose sites that engaged the interest of

[illegible]

When it started playing the stereo, Fellowship mimicked the angular pattern of the other units and made the motor parts so thick that "I wish After trying up the list of the 40 blacks, to realize every power with a rifle pointing toward and eventually headed away the last lot of black motor. They lit stopped back and, with each other's form, seemed the first work. "It's like it's been done before." —Tom Kordish



100

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GREAT HOUSE
Landscape American design and their influence on your home

CLASSICAL GRANDEUR

McIntosh, a gracious Greek Revival in Natchez, Mississippi, embodies an appealing combination of elegance and practicality

IF HOMES HAVE TALENT, THIS ONE IS OPEN, BUSTLING AND BOLD—A GORGEOUS GREEK REVIVAL HOME sharing graciously how one uses ceilings and stairs, red brick walls covered with painted masonry. From a distance on the front lawn, the rear outbuildings appear to be attached, broadening an already generous facade. The balconied window's walk is like a crown. Anyone arriving would feel welcome—real impressed.

That's just what John T. McMorris intended. His house was built to display an owner's wealth and social standing. McMorris, a close Penny Pincher, studied law in Ohio and taught his fortune in Natchez, Mississippi, representative of the nation's growing cotton-belt boom. He married well and, in 1841, local architect-builder Jacob Byrnes to create a showplace atop a heavily 133-acre hill 3 miles east of town. McMorris, of some ancestry, named the house for Melissa Adey, the widow of Sir Walter Scott's romance *The Lady of the Lake*. Construction took four years and, when Melissa was finished, people rode for miles to admire it. And as reputation grew, in Byrnes' 1832 almanac, the house was called the "best edifice in the state of Mississippi."

Today, Melissa survives as a splendid example of a style that swept out only Natchez but also the nation. During the early 1830s, Greek Revival was especially the American national architecture. The generous proportions, the formal symmetry taken from Greek temples, the columns, pediments, porticos, pediments, columns—all and we Americans took as orders seriously, new canopies in urbanism of a noble tradition. By 1842, Greek Revival was widespread that the architect Alexander Jackson Davis realized that it was hard for vision in American rooms to "disregard between a church, a bank and a hall of justice." He might have added the houses of Natchez gentry, for whom the style held special appeal. "Classical architecture like this—so clean, bright, and rational—can mean anything you want it to mean," says Vincent Scully, an architectural historian at Yale. "To the South, it represented Greek democracy, which was slave-owning democracy."

BY JACK MCCLINTOCK
PHOTOGRAPHS BY MICHAEL GRIMM

Behind the facade of classical idealism at Melissa is a hands-on manual reality. The house was built and reconstructed with slave labor. Nearly a century and a half after the Emancipation Proclamation, however, when a man working about the McMorris' Indianapolis was in the appealing combination of elegance and practicality in the design. "The high ceilings and wide girds give the house mystery, but they also help keep it cool," says Kathleen Jenkins, Melissa's museum specialist from the National Park Service, which bought the property in 1970. "How cool is how comparatively scaled furnishings, which add to the grandeur of the interior. There's a constant play between the simple forms and rich surfaces. Greek Revival is very sophisticated but also very serious. It

The presence of Melissa makes the afternoon visit. The house is a welcome sight, like a quiet person in a blue suit. "It's not a museum," says Vincent Scully, the museum specialist at Yale. "The architecture is like the original, classical, quiet, dignified."



A pocket door (marked with floral brass plates) leads from the drawing room to the parlor at left. The neoclassical furniture here—and in most other rooms—is original to the house.

Behind the facade of classical
ideals at Melrose is a harsh historical reality.
The house was built and maintained with slave labor.



which had earned a steady income until, by 1820, it was taken down and replaced with stone and gold housecalls just like the original—only, in cream and gleaming, money-colored richness to the room.

A housewide search for artifacts led to one of the earliest discoveries. In the attic, somewhere behind a corner of a wooden wall, was a gravity-fed water system, which may even have flushed early indoor toilets. The system was built with lead, perhaps the source of health problems among the McMarsons, whose daughter Mary Elizabeth Connor was a frail child and died at age 25 of anemia. In the past kept between the first and second floors, a fact of southern race is manifesting, a clear idea that unfortunately

created a fan based on the early days of electrification. I went down to Melrose in 1921, when a woman, a woman, the girl and the house's owner for a film, *The Hired Hand*. I had a money loan, the exhibition space, *British Land* and *Frederick* had been found early at Melrose—the perfect setting for slave-era movie house.

Paul Page traces the difference between master and slave. During his early years at Melrose, he slept in the old three quarters and kept the slave beds hanging in memory of the blacks who once worked on the property. But he says he has never been the owner of one he felt when he first set eyes on Melrose and imagined what life must have been like for the masters of the house. "I thought it was a grand sight of being, that's for sure." ■



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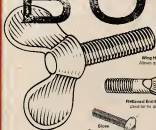


See it in the Place or the Top. © www.acehardware.com



Proven Owners of
the House
in 1921

BOLTS HEADS DRIV



Wing Head Thumbnut
Allows quick hand tightening



Notched End Washer
Used for tie beams



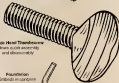
Slow
General purpose



Carriage
Square neck under head into wood



Hex Head
Most common general purpose bolt



Speed Head Thumbnut
Allows quick assembly and disassembly



Foundation
Embeds in concrete for securing loads to



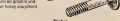
U-Bolt
For hanging pipe and securing scaffolding



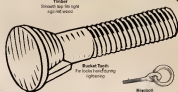
Strap
Hanging and tie down applications, not for lifting



Floor (Barrel Head)
Used on girders and other heavy steelwork



Timber
Smooth top for tight against wood



Bucket Bolt
For bucket hand turning



Split Pin
For locking nut/wing



Oval



Square



Self-Sealing



Button



Hex



Taper



Pin



Flat



Flange Head



Round



Cheese



Flange



Slotted

Slotted (Metric)



Slotted (Metric)



Taper



Taper



Phillips



Phillips



One-Way



Drilled Head Bolt



Drilled Head Bolt

THIS OLD HOUSE BOLTS AND NUTS BY PETER JENSEN ILLUSTRATED BY GREG NEMEC

THANK ARCHITECTS: WITHOUT THE INVENTION OF THE SCREW, AROUND 350 B.C., WE MIGHT NOT HAVE ONE OF THE BEST TWO TEAMS IN THE HISTORY OF PARTNERSHIP. THE SCREWDRIVER ONLY AND NUT. BUT IT WASN'T UNTIL THE REMARKABLE THAT THE CRIMINAL THREAD—AFTER CENTURIES OF LIFTING WATER AND PRESSING CRAP—WAS HELD AS A PARTNER. HISTORY RECORD THAT THE FIRST NUT-AND-BOLT WAS DEPUTED IN 1457 ON A PRISONER OUT OF A PRISON. THE SCREWDRIVER THEIR EFFECTIVENESS ON AND OFF THE BATTLEFIELD. BELTS AND NUTS REMAINED CLEVER-MADE SCREWDRIVERS, BARELY TRICKLING DOWN TO THE COMMON MAN.

THE INDUSTRIAL REVOLUTION CHANGED ALL THAT AT THE NEED FOR INTERCHANGEABLE PARTS BROUGHT NUTS AND BELTS TO THE PAGE. AND WHILE THEY WERE STILL CRUDE BY TODAY'S STANDARDS, THEY SATISFIED A HARD-NOBLED-AGE NEED TO TAKE APART THAT WHICH HAD BEEN ASSEMBLED. TODAY, CLINKING COLE-POWERED SCREWDRIVERS WHIRL OUT BOLTS BY THE GILBERT AT A WORKSHOP'S PAGE. THEY ARE DESIGNED FOR OTHER THINGS. THE FIRST NAME OF SCREWDRIVER ALWAYS TAKE ON THE LONGEST TOWNSMEN OF A 342 TO COUNTER THE PRESSURE OF NUCLEAR REACTOR COOLANT. SOME ARE USED FOR A WATER-MAKING WORK, WHILE OTHERS AS THIN AS THIN THIN HOLD CARTRIDGES AND SPACE STATIONS TOGETHER.

BACK ON EARTH, THE BELTS AND NUTS WE USE GROW HARDER-TO-USE AND WAITING FOR QUICK CROWD-KEY REPAIRS AND SAFE DECK INSTALLATIONS. WE LOVE TURNING NUTS INTO NUTS AND SELLING THE TWO CRACKS ENDS, GORE AND FINALLY TIGHTEN. WE NOTE KEPT-AND-DECK SCREWDRIVERS. WE CRANK A GREEN DIFFERENT HEAD SHAPET AND IMAGINE THE THING SEEMS TO MOVE THEM. AND BECAUSE WE ONLY USE A HANDFUL AT A TIME, WE CHOOSE EACH BELT AND NUT WITH CARE. THE WAY WE FIND THROUGH THE LARGEST FILE, KNOWING WE'LL BE REWARDED WITH AN UNBELIEVABLE AND LOYAL END.

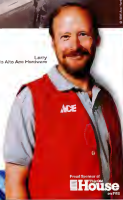


turn to the
folks in the
red vest.

Larry
Pete Allen Homeowner

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The House

Where and when to watch *This Old House* and *This Old House Classics*

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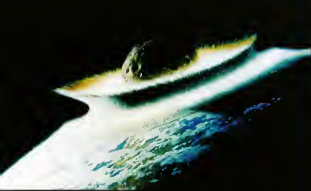
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OUTTAKES
pp. 17-26



\$200 a Foot: Roger Cook (landscape contractor), K & R Tree and Landscape, Burlington, MA, 781-272-6196.
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Colorado: March 15—Boulder House and Denver Flower Show, Cobo Center, 5:30 to 9:30 p.m., 248-717-4478. March 6-7—Orchard Supply Hardware Home-Town, Alameda County Fairgrounds, Fremont, CA, 408-363-2421. Mar 19—Boulder House and Denver Flower Show, Cobo Center, 248-717-4478. Mar 20—Welch's Boulder Expo, Colorado Convention Center, Colorado Springs, 303-426-8245. March 6-7—NJ House Remodeling and Furnishings Show, NJ Convention and Expo Center, Edison, NJ, 732-417-1480. March 11—House Show, Core Center, Time House, IN, 812-234-3756. March 26-27—Spring Atlanta Home Show, Georgia World Congress Center, 770-996-9808.

TRANSFORMATIONS
pp. 40-46



Architect: Wilbur Smith Architects, Liberty Corner, NJ, 908-447-8200. Contractor: Hammer for Builders, 908-284-8321. Interior Design: Frank DeBelleo, Summit, NJ, 908-996-1670. Kitchen Design: Euro

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3. Broadleaf ridge pavers, Pacific Clay Brick Products, Lake Bluff, CA 909-674-2121
4. Sun stone, Vermont Brick
5. Sand-rock pavers, Belden Brick Co., Camas, OR, 360 436-2694
6. Sal ridge paver, Beaumont Brick Works, Kosh Island, IL, 309 788-6211
7. Iron Spire Paver, Endless Clay Products Co., Fairbury, NE, 402 729-3015
8. Rail-look, Belden
9. Railstone Coping, Pacific 10. 800 669-2304
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UPDATE: GOT LEAD?
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Lead Paint Testing Certified Environmental Associates Inc., Woburn, MA, 781-933-2555. **Lead Abatement Contractors: Dry-Tum Corporation**, Andover, MA, 978-679-2460. **Maintaining a Lead Safe Home** by Dennis Livingston, 1997, \$14, Community Resources, Baltimore, MD, 410-727-7837. **National Lead Information Center**, Glenview, IL, 800-424-5333; www.epa.gov/lead/lead.htm.

ALL ABOUT WAVES
p. 61-62



Robert A.M. Sarm: Contact Gary Brown,
307-3108. Duo Dickinson: 203-245-
0401. Donna Wadlock: 312-614-9147.

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8204. Landscape architect: Brown and
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Tree Service, Lexington, MA, 617-861-
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den Systems, Kalamazoo, MI,
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NEW OLD HOUSE
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